

Dental Digest

February 1956

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M42/C

... DESCRIPTIVE

SYMBOLS THAT SIMPLIFY TOOTH SELECTION



MEDIUM LENGTH	WIDTH OF 6 ANTERIORS CARDED FLAT	36 MM	39 MM	40 MM	42 MM	43 MM	45 MM	46 MM	48 MM	51 MM
LONG	<u>L</u> <u>36</u>	<u>L</u> <u>39</u>	<u>C</u> <u>39</u>	<u>L</u> <u>42</u>	<u>C</u> <u>42</u>	<u>L</u> <u>45</u>	<u>C</u> <u>45</u>	<u>L</u> <u>48</u>	<u>C</u> <u>48</u>	<u>L</u> <u>51</u>
MEDIUM	<u>M</u> <u>36</u>	<u>M</u> <u>39</u>	<u>M</u> <u>40</u>	<u>M</u> <u>42</u>	<u>M</u> <u>43</u>	<u>M</u> <u>45</u>	<u>M</u> <u>46</u>	<u>M</u> <u>48</u>	<u>M</u> <u>51</u>	<u>C</u> <u>C</u>
DOMINANTLY "C" CURVED LABIAL CHARACTERISTICS	<u>C</u> <u>39</u>	<u>C</u> <u>40</u>	<u>C</u> <u>40</u>	<u>C</u> <u>42</u>	<u>C</u> <u>43</u>	<u>C</u> <u>45</u>	<u>C</u> <u>46</u>	<u>C</u> <u>48</u>	<u>C</u> <u>51</u>	<u>F</u> <u>F</u>
SHORT	<u>S</u> <u>39</u>	<u>S</u> <u>40</u>	<u>S</u> <u>40</u>	<u>S</u> <u>42</u>	<u>S</u> <u>43</u>	<u>S</u> <u>45</u>	<u>S</u> <u>46</u>	<u>S</u> <u>48</u>	<u>S</u> <u>51</u>	<u>F</u> <u>F</u>

This is how Five-Phase Anteriors simplify tooth selection and give your cases the "living" appearance you want. For each case automatically forms the correct Five-Phase mold symbol to be specified. Thus, the symbol M42/C for example describes anteriors of medium length, measuring 42 mm carded flat, with dominantly curved labial character.

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Dental

Vol. 62, No. 2

Digest

Registered in U.S. Patent Office

FEBRUARY 1956

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The magazine is mailed on the fifteenth of the month of issue.*

The APICAL IMPLANT

as a Monotooth Splint

GEORGE D. PARKER, D.M.D., Denver

DIGEST

This illustrated report on the application of a precast surgical Vitallium® apical implant was motivated by the many problems presented by patients. The necessity for immediate dental treatment is not new but the social and economic factors of the modern world have drastically changed dental techniques. Present day requirements in dentistry point to the time when the patient will not permit the loss of a tooth in the "visible" dentition for a period longer than the dental appointment itself. This article discusses the efficacy of a synthetic apex attached to a tooth, the root of which is partly natural and partly synthetic and presents in detail the procedure used in the application of the implant.

General Considerations

The implant used is simple in design, resembling the end of an ordinary wood screw with a root canal extension. The extension of the implant is cemented in the root canal of the amputated root of the natural tooth, either *in situ* during apicoectomy, or it is placed before replantation. The precasting of different sized implants assures immediate availability and eliminates time-consuming impression procedures.

Sources of Success—It is common for failures of any operative procedure to be attributed to the inadequacies of a material used. Usually, however, failures result from the im-

proper use of the material. It is imperative, therefore, that the utmost attention be paid to (1) diagnosis, (2) the material itself, and (3) the operative techniques involved.

Control of Infection—In the past fifteen years dramatic advances have been made in the control of infection, first by the sulfonamide group of drugs and later by the various antibiotics. Successful surgical operations about the jaws, which formerly would have resulted in failure, are now becoming commonplace with the aid of these agents.

Application of Metal Implants

The principles of metal implantation in tissue originated in the need for improved methods in the reduction and fixation of fractures. The apical implant is a tissue-tolerant alloy consisting of cobalt, chromium, and molybdenum.

The Metal Employed—Vitallium® has been used with notable success in thousands of surgical operations since 1936. The metal is implanted permanently in the human tissue. It is inert, nonirritating, and strong.

Functions of Implant—(1) The apical implant functions as a completely intraosseous synthetic apex or splint.

(2) The implantation does not replace the entire root in the alveolus but is an integral part of the natural tooth in the jaw bone.

(3) Its use may be temporary or permanent. When placed during apicoectomy the implant acts as a permanent intraosseous splint.

(4) When used in the replantation technique the implant acts only as a retentive intraosseous splint eliminating the need of a multitooth splint.

Common Purpose—The purpose of replants, implants, and bone grafts is the same: they are used (1) to restore function, or (2) to improve an esthetic deficiency, or both.

An Autogenous Graft—A tooth replant is in reality an autogenous graft. It is an almost perfect graft because it needs no alteration or preparation for a different location. The biologic responses of the replanted tooth tend to support this hypothesis.

Biologic Responses—The tooth may undergo absorption or ankylosis. These are phases of the same biologic process which is normal to bone and apparently to most replanted teeth. The functions of the component tissues of the periodontal membrane are not completely understood.

Changes after Replantation—Orban¹ points out significant elements which may account for changes following replantation: "The biologic difference between the cementum (continuous apposition) and the bone (alternating resorption and formation) may be due to the function of this epithelial network . . . It has often been observed that teeth, once extracted and replanted, become ankylosed. This means that the tooth, as such, has lost its organ character and the surrounding tissue reacts to the replanted tooth just as it would to a bone implant. The biologic reaction may be caused by the absence of the epithelial network in the periodontal membrane which was lost in the act of extraction."

¹Orban, Balint: The Epithelial Network in the Periodontal Membrane, *JADA* 44:632-635 (June) 1952.



1. Precast Vitallium® apical implant.

Time Required for Resorption Varies—It is impossible to estimate accurately the time element of the root resorption process of a replanted tooth. The author has found that the root resorption process in most adults requires a period of at least two to three years.

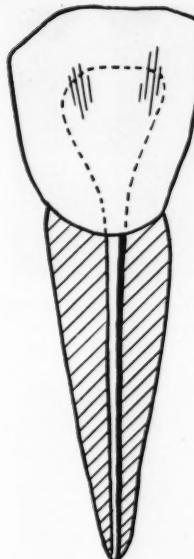
Experiments with Entire Root—Attempts have recently been made to replace the entire root of a tooth with various types of implants of different designs. The purpose of these types of implants has been to support an artificial crown. In general, these implants have been failures. Bone absorption has occurred in place of anticipated osteoblastic proliferation. Conservative apicoectomy, however, enjoys a record of remarkable success.

Increased Function Induces Bone Response—The dividing line of physiologic osteoblastic response and traumatic absorption is a subject of acute interest and debate. According to Bohlman,² "Gradually increased function enhances bone response. Too great loads per unit of weight-bearing area produce bone necrosis or absorption; the cutoff point between absorption and of tolerance and proliferation is not known. It may depend to some extent on age and nutrition."

Replantation of Natural Teeth

There are numerous reports of successful replantation of the natural tooth after total luxation. Most of these reports have been accident cases and the following measures are taken:

1. The pulp and root canal tissue



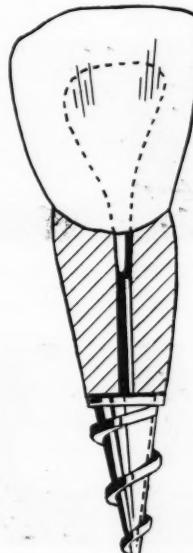
2. Maxillary central incisor.

is removed and cleansed through a lingual opening.

2. Some operators lay back a flap and establish a vent from the apex of the alveolus through the labial plate to eliminate hydraulic pressure within the alveolus.

3. Some method of temporary immobilization is usually applied.

Prognosis has been favorable in many cases. These accident replanta-



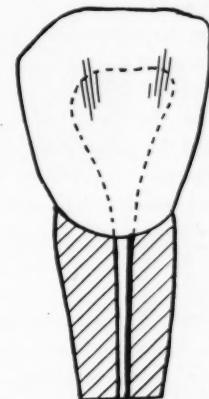
4. Implant placed in position in maxillary central incisor.

tion reports are not common but they are spectacular.

The Peripical Abscess Syndrome

The hazards of erroneous diagnosis complicate the treatment of any disorder. Many teeth are extracted because there is no diagnosis at all, the dentist relying solely upon the subjective complaint of the patient.

Diagnostic Aid—Objective findings



3. Root end of maxillary central incisor amputated.

clearly separate the acute and chronic periapical abscess. The x-ray examination is an efficient diagnostic aid along with the patient's complaint of soreness to percussion and intermittent pain. There is no reaction to the electric pulp test.

Location of Involved Tooth Important—Interest is now centered in the location of the particular tooth involved and the amount of periapical destruction. A brief case history winds up the pertinent information needed to prescribe treatment.

Treatment of the Chronic Apical Abscess Syndrome

At present, depending upon the diagnosis, there are three general methods of treatment: (1) Extraction. (2) Endodontics. (3) Apicoectomy.

A better classification might be surgical and nonsurgical intervention.

Extraction—When a permanent tooth is extracted and discarded the patient suffers a total loss.

Endodontic Methods — Notable

²Bohlman, H. R.: Replacement Reconstruction of the Hip, Am. J. Surg. 84: 268-278 (Sept.) 1952.

strides have been made toward perfecting endodontic methods in recent years, but many operators have searched for more promising avenues of approach. Endodontic treatment, at its best, is limited in application and is time consuming. The prognosis is not always encouraging.

Apicoectomy—This method is respected by many. It has succeeded when endodontic treatment has failed due to periapical complications.

Bone Destruction May Heal: Kronfeld³ states "Clinically, it is well known that large areas of bone destruction around the apex of an infected pulpless tooth may heal completely after the root end has been resected and the pulp canal filled. All these clinically successful cases showed a normal uninflamed periodontal membrane and deposition of cementum upon the resected dentin surface."

Limitations: Apicoectomy also has limitations. Location and anatomic factors such as the maxillary sinus and mandibular canal often determine the practicability of the operation.

Selection of Patients for Apical Implant

The patients selected for implantation were young (between 14 and 40) and in general good health. There was no history of organic disease interfering with normal metabolism. Occlusion and oral hygiene were average. Most patients selected for replantation presented with the chronic apical abscess syndrome described.

Antibiotics Administered—All patients received a prophylactic intramuscular injection of 600,000 units of Bicillin® or other antibiotic at the time of operation. The postoperative course was followed by regular examinations with radiographs.

Two Types of Cases Represented—The implant was used in two types of cases, both of which are one-visit operations:

1. Insertion following amputation of root *in situ*.
2. Replantation of a tooth with the implant into the alveolus from which

³Kronfeld, Rudolf: *Histopathology of the Teeth*, Philadelphia, Lea & Febiger, 1933, pp. 200-201.



5. Extensive periapical destruction of central incisor.



6. Implant in place two years following apicoectomy. No symptoms or mobility.



7. Periapical abscess of first bicuspid.



8. Tooth extracted prior to replantation.



9. Replanted tooth two years later showing root resorption. No symptoms and tooth firm in jaw bone.

it has been removed by accident or extraction.

Insertion of Apical Implant After Apicoectomy—Operative Technique

When more than one-third of a root is removed during apicoectomy, functional retention may be jeopardized. The excessive periapical destruction of these cases offers excellent opportunity for placement of the implant with little or no removal of bone. The implant occupies part of the area of bony destruction. It is, therefore, a relatively simple procedure to insert the stem of the implant into the root canal after amputation.

Method—1. Enlargement of the canal and removal of the contents are accomplished through a lingual opening in the crown.

2. The stem furnishes part of the root canal filling, and there should be a good seal at the canal opening.

3. It is not necessary that the base of the implant be the exact shape of the amputated root end. Normally, cementum will be deposited on the uncovered surface.

4. It is important to seat the implant so that all of it is inside the contour of the cortical plate, thus facilitating regeneration of the plate.

5. In maxillary incisors it often is necessary to place a slight bend in the stem at the base of the implant.

6. If the implant extends too far out from the contour, a permanent fistula will probably result.

Regeneration of Bone Requires Time—One disadvantage of apicoectomy is that it requires a long period of time for complete regeneration of bone. The implant does not complicate this normal long postoperative healing process. As the process of regeneration continues, lamellated bone forms around the implant, stabilizing the tooth in the alveolar bone.

Replantation Using the Apical Implant

The intelligent patient does not enjoy the prospect of the extraction and loss of a tooth. Conventional practice, however, often dictates such a loss. Root canal treatment may be ruled

out because of periapical destruction. Apicoectomy may be precluded because of proximity to the maxillary sinus or the mandibular canal. Many patients resent being told there is nothing that can be done. Patients with the chronic apical abscess syndrome require many appointments and present many problems. An attempt to retain the tooth would seem to be thoroughly justified.

Procedure Uncomplicated—Replantation of a tooth using an apical implant is a relatively simple procedure:

1. The involved tooth is extracted with caution to minimize trauma and prevent fracture of the cortical plate.
2. Maxillary molars were excluded from the trials for anatomic reasons. For the same reasons, only one implant may be placed on the maxillary first bicuspid, leaving the other root amputated.
3. All details of the operation are performed in as nearly an aseptic manner as possible.

Laboratory Diagnosis—The tooth is taken to the laboratory for preparation. An apical bacterial smear may be taken for pathologic diagnosis and antibiotic spectrum analysis. Restorations not involving contact points may be placed.

Steps in Procedure—1. A suitable implant is selected. The selection is based upon the size of the root, the level of amputation, and proximity to the maxillary sinus or mandibular canal.

2. If no interference exists, the overall length of tooth plus the implant should exceed by 2 to 5 millimeters the overall length of the extracted tooth. This factor eliminates the need of the usual multitooth acrylic splint.

3. The root is amputated at the calculated level. It is not necessary to make a lingual opening through the crown. All reaming and cleaning can be done through the canal opening after amputation.

4. The implant is placed in position using dental cement. Gutta-percha is not satisfactory because of its elasticity.

5. Cement may be placed in a used cocaine carpule by removing the



10. *Implant in place one year following apicoectomy. No symptoms or mobility.*

rubber tip. It may then be delivered into the canal opening with an 18-gauge needle or may be delivered by reverse action of a reamer.

6. After the cement has hardened, remove any debris on the root gently with a sponge soaked in normal saline solution.

7. The implant should be sterilized before use, but the tooth portion is not sterilized and remains in normal saline solution awaiting replantation.

Replantation Procedure—During the interim the patient keeps the mouth open with the saliva ejector in place. The periapical area of the alveolus is now curetted to remove any diseased tissue. A surgical bur, smaller than the diameter of the implant, is used to perforate the apical bone to allow for the implant. The tooth is replanted manually or with the aid of a rubber surface mallet. Moderate biting force seats a bicuspid in occlusion.

Advantages of Replantation

- (1) One-visit operation.
- (2) Prompt postoperative recovery. No loss of cortical bone. Rapid reattachment of periodontal fibres.
- (3) No need for immobilization splint. The mechanical retention overcomes hydraulic pressure.

(4) Functional repair, attachment, and asymptomatic retention of the tooth.

(5) The possibility of future planning by both dentist and patient for immediate prosthesis if needed.

Summary and Discussion

The purpose of teeth is to secure and masticate food. The loss of teeth impedes this function and disturbs the dentofacial harmony. Graber⁴ points out that current hypotheses of the fundamentals of occlusion are so bizarre and diversified that it is only logical that a multitude of prosthetic problems and failures result. The purposes of the apical implant are the following:

- (1) To provide a substitution apex to the natural tooth for temporary or permanent retention in the jaw bone.
- (2) To provide a technique whereby replantation of a totally luxated tooth, either accidental or intentional, may be facilitated and simplified.
- (3) To provide a different approach to the treatment of chronic periapical abscess syndrome.

Positive Conclusions Premature—The many possibilities of application of the apical implant are suggested. There is no problem of root resorp-

⁴Graber, T. M.: *The Fundamentals of Occlusion*. JADA 48:177-187 (Feb.) 1954.

tion when the implant is used as a prosthetic apex in apicoectomy because the biologic function of the periodontal membrane is not destroyed. As demonstrated by Osgood,⁵ replantation with the apical implant is a different problem and should not be

⁵Venable, C. S.; Stuck, W. G.; and Beach, A.: Effects on Bone of the Presence of Metals; Based upon Electrolysis; Experimental Study, Ann. Surg., 105:917-938 (June) 1937.

presented with a guarantee of success over a period of years but as a possible method of retaining a tooth for an unpredictable period of time.

Valuable Addition to Dental Therapy—Critics should keep in mind that most dental complaints are treated on a symptomatic basis. Cessation of symptoms and treatment are generally simultaneous. An asymptomatic re-

port supported by negative findings leads to the assumption of the success of the treatment. If symptoms are relieved, therefore, the pathologic focus eliminated, and the patient is satisfied, the apical implant will prove to be a valuable addition to dental therapy.

5528 East 33rd Avenue

Common Office Emergencies

NORMAN B. ROBERG, M.D.

Fainting

Fainting is the commonest office emergency, though the one most feared is that of sudden death. Sudden death in the office is rare and results from coronary artery thrombosis. Combining the experiences of several physicians having large practices, there was one death for every 85 years of office practice. Since more acutely ill patients will visit the office of a physician, a dentist should not have a patient die in his office more than once in 200 years.

Mechanism of Fainting—Fainting, the common emergency, occurs when there is dilatation of the blood vessels of the legs and abdomen. The blood stagnates in the lower body, does not return promptly to the heart, and thus the blood flow to the brain is reduced.

Symptoms—The patient becomes pale, sweats, and usually complains of weakness and nausea before losing consciousness.

Treatment—At the very first of these signs the following measures should be taken:

1. Stop immediately whatever procedure you are doing.

2. Lower the back rest of the chair so the patient lies flat.

3. Remove from the mouth any instruments, packs, or loose prostheses. Loosen neckties and collars; one can ignore belts, garters, and girdles.

4. Lift the feet so that the legs are straight and the feet are about 12 to 24 inches above the level of the chest. This will drain stagnating blood back

toward the heart and will reestablish adequate circulation to the brain.

5. As pallor diminishes and the patient begins to stir, one may lower the legs to the horizontal and hold cotton dampened with aromatic spirits of ammonia to the nose.

6. If the patient retches when coming out of the faint, turn the patient on his side so that the vomitus is ejected freely and is not aspirated.

7. Insist on the patient's remaining horizontal in the chair for at least ten minutes after consciousness returns. After another thirty minutes on a couch the patient usually can leave the office, but never alone, because the faint may recur on the street.

8. Do not sit the patient upright and lower the head between the knees: This obsolete maneuver does not shift the blood from the legs to the heart and brain. There is danger of the patient toppling forward onto the floor and suffering a head injury.

Common Causes—Most fainting attacks are preventable, and most are caused by anxiety: by the sight of syringes, extraction forceps, and drills; by the fear "that the dentist won't stop" and by the alarm of unexpected pain or procedures.

Preventive Measures

Avoid touching the upper part of the neck just below the angle of the jaw, especially in elderly patients. Even touching this area may stimulate the carotid sinus, resulting in a sudden (though temporary) stopping

of the heart, fall in blood pressure, and unconsciousness.

Hot, stagnant air is conducive to fainting. If the office cannot be cooled, use some form of air-circulator of constant, moderate action. A cold wet towel to the forehead is cooling, comforting, and convenient for covering the patient's eyes. If you tell the patient what you are about to do, what the patient doesn't see won't alarm him.

Incidence of Epilepsy—Epileptic fits, asthmatic attacks, and acute attacks of heart failure occur only rarely in the office, and subside spontaneously.

Epileptic attacks are alarming but not fatal. With a warning cry, the patient will stiffen, turn blue, froth at the mouth, and have convulsive movements. All that is necessary is to insert folded towelling between the teeth to protect the tongue from being bitten and to protect the head from bruising. Because of exhaustion and confusion following the fit, the patient should be removed from the office by ambulance.

Heart Conditions—Sudden distress in the chest, or difficulty in breathing in patients over fifty usually represents heart trouble: angina pectoris or cardiac asthma (acute congestion of the lungs from temporary heart failure). Sit the patient upright, and he will improve in a few minutes. The patient often has his medication with him.

Bronchial Asthma—Young persons occasionally have attacks of bronchial asthma. They know their condition,

(Continued on page 65)

The Impossibility

of PERIODONTAL REATTACHMENT

JOHN WILLIAM GIBBS, D.D.S., Charlotte, North Carolina

DIGEST

Much has been written and many clinics have been presented on the controversial subject of periodontal reattachment. Reputable clinicians and practitioners have presented convincing evidence on both sides of the question much to the dismay of the initiate into periodontology, the newly graduated dentist, who must base his case management and methods of treatment on his personal convictions on the subject. It is intended in this article to show the biologic impossibility of "reattachments" as the term is used and understood by periodontists and to stimulate examination of the biologic aspect presented.

Conservative Treatment

The school of conservative periodontists who believe that reattachment is possible through so-called conservative (in particular, avoidance of gingivectomy) methods should not be discredited. All practitioners wish this theory was tenable because of the disadvantages of gingivectomy. The benefit to the patient who receives conservative treatment as opposed to no treatment is obvious and no type of periodontal therapy should be discouraged. The problem should be thoroughly exposed biologically, however, so that new workers in the field of periodontics do not direct their efforts to a vain pursuit of the impossible.

Epithelial Attachment Highly Specialized Structure

The crux of the all-important question of reattachment or no reattachment lies in the understanding of the histology and physiology of the epithelial attachment. Too many clinicians consider the epithelial attachment as merely the terminal part of the gingival epithelium. This is unfortunate, for the epithelial attachment of the human tooth is a highly specialized histologic structure with a definite, highly important physiologic function. Its pathology governs to a large extent the course of periodontiasia.

Two Histologic Layers—This highly specialized structure, the epithelial attachment, is the remains of another highly specialized structure, the united enamel epithelium. Following the last phase of amelogenesis, the enamel epithelium lays down the primary enamel cuticle by secretion. In 1921 Gottlieb described a second layer of hornified cells lying between the primary enamel cuticle and the epithelial attachment proper. This he called the cuticula dentis because it was found not only on crowns of teeth, but on the roots of teeth also. It would seem, therefore, that the epithelial attachment has two distinct histologic layers interposed between itself and the surface of the tooth: (A) the primary enamel cuticle, and (B) the cuticula dentis.

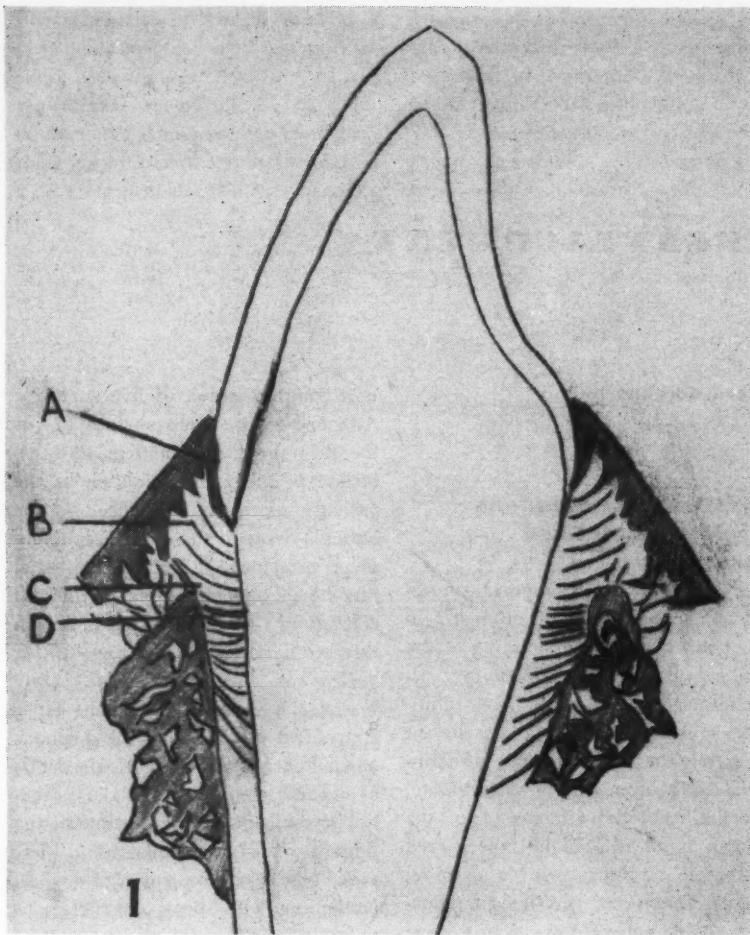
Five Surfaces Combined—The union of gingival epithelium to the tooth surface (enamel or cementum)

is a complex union of five surfaces: Attached to the tooth surface (1) is the primary enamel cuticle (2). Attached to the primary cuticle is the cuticula dentis (3). Attached to the cuticula dentis is the epithelial attachment proper (4). To the epithelial attachment proper is attached the oral epithelium (5). Primary union is with intercellular bridges.

Organic Union Possible Only Through Epithelial Attachment—It is convenient to consider the primary enamel cuticle and the cuticula dentis as organic components of the epithelial attachment proper in view of the limited knowledge concerning their metabolism: organic union of the oral epithelium with the tooth surface is possible only through the medium of the epithelial attachment, and the epithelial attachment is capable of remaining in organic union with the tooth surface as it moves apically, either from physiologic or pathologic causes.

Vital Connection with Tooth Eliminated—Once the epithelial attachment has moved apically from a more cervical position, its vital connection with the tooth surface is gone. It should be obvious from the preceding discussion that the stratified squamous oral epithelium has no means of attaching itself to a calcified tooth surface. For this to occur it would be necessary for the oral epithelium to undergo mutation and differentiation and become tissue similar to the original enamel epithelium, an inconceivable transformation.

Protective Function—The physiologic function of the epithelial attachment is definite. It is a protective one. All elements of the periodontium are



1. Normal dental anatomy.

of connective tissue origin with the exception of the epithelial attachment (it should be considered as an element of the periodontium). No connective tissue can survive unless sealed off from external environment by epithelium. It will lose its vital fluid or its fluid will become contaminated. Either process will result in its devitalization and destruction.

Physiologic Function—The physiologic function of the epithelial attachment is to *seal off from external environment all connective tissue elements of the periodontium which cannot survive unless it does.*

Visualization of Epithelial Attachment

A brief resumé of normal dental anatomy is shown in Figure 1 dem-

onstrating that the epithelial attachment of the tooth is attached to the gingival epithelium at A, sealing off from external environment all connective tissue elements of the periodontium.

Periodontoclasia Involvement—In Figure 2 is shown a diagrammatic section of a tooth involved in periodontoclasia: (1) the epithelial attachment has been destroyed by infection and/or has proliferated down to level E. (2) There is now no vital epithelium on the tooth above level E. (3) The first two groups of periodontal fibers, B and C, have been destroyed, the alveolar crest of bone has been destroyed by soluble toxins from the infection, impairment of nutrition, and lack of stimuli from the destroyed fibers. (4) The gingival epithelium,

G, has grown down the soft tissue wall of the pocket in an effort to remain in organic union with the downward proliferating epithelial attachment, and to preserve the remaining elements of the periodontium by sealing them off from the external environment.

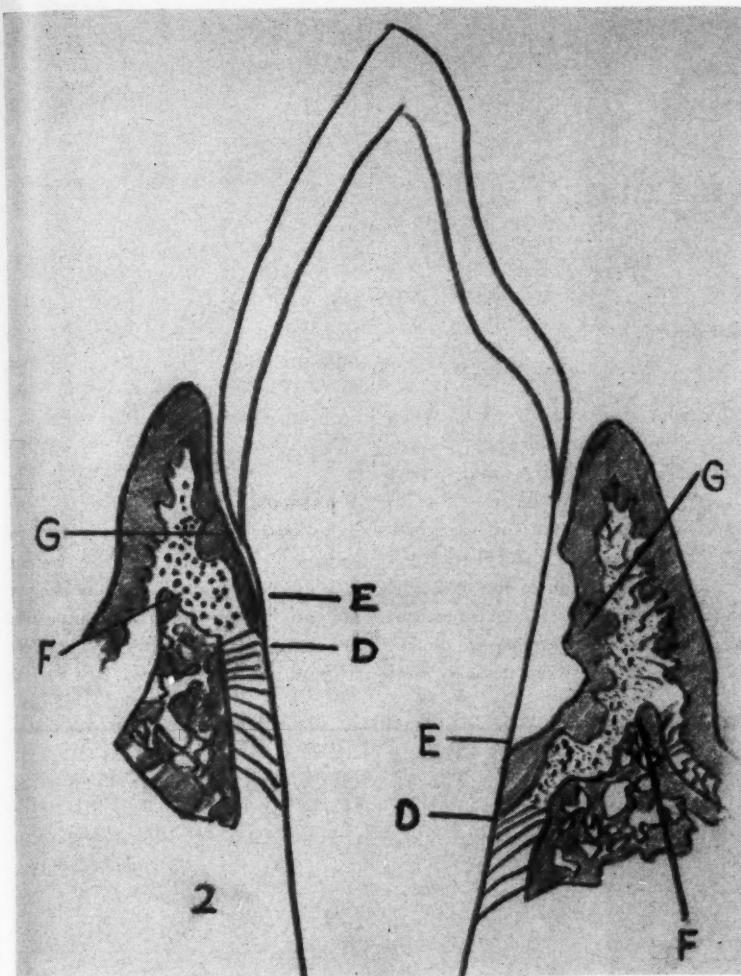
Frequently Accepted Theory

It is often postulated that by careful planing of the root surface (assuring positively that there is no remaining epithelium on the root surface), debridement of the pocket, and curettage of the gingival epithelial from the soft tissue walls of the pocket, a blood clot will form and organize into new periodontal fibers, reuniting the tooth with the bone, thereby closing the pocket at or near its original inception.

Bone Has Been Eliminated—For two reasons this is impossible: (1) There is no longer any bone for these new fibers to be anchored in. They would have only the corium of the gingiva to be anchored in. (2) Were the bone to remain at or near its original level, as in some intrabony pockets, there is now no epithelium on the tooth above level E (Fig. 2). It has been destroyed by infection (or planed carefully away).

Interposed Epithelial Attachment Required—Assuming that new fibers could be formed from the clot by differentiation and be incorporated in new bone and cementum formation, how is the gingival epithelium going to unite with the calcified tooth tissues and seal them off from external environment? Oral epithelium cannot unite with enamel, cementum, or dentin without an interposed epithelial attachment.

One Possible Result—In the author's opinion, there is but one possible end result: The gingival epithelium must proliferate back down the soft tissue wall from whence it was curedtted until it meets and unites with the epithelial attachment at the bottom of the pocket. This it must and will do, for connective tissue must be completely sealed off from external environment or it becomes and re-



2. Diagrammatic section of a tooth involved in periodontoclasia.

Common Office Emergencies

(Continued from page 62)

they also often have their medications with them, and, if they don't may be given adrenalin, 1:1000 dilution, 5 minimis subcutaneously.

Informal Questioning Helpful — Most emergencies can be avoided by a few minutes of casual questioning of the patient, especially a new patient. Without seeming to imply that you are suspicious of their health, or that you expect an untoward reaction to your treatment, inquire informally and quietly concerning the taking of medicines, any recent or chronic illnesses, any regular attendance by a physician, and whether or not the patient has any anxiety concerning the

dental condition or its treatment. If you are uncertain as to the patient's physical or nervous stability, consult with the patient's physician before undertaking any strenuous therapy, and ask that someone accompany the patient to your office.

Conclusions

1. First aid measures and medications are greatly overrated.
2. Do not interfere with the natural tendency of the patient to recover.
3. It is better to do nothing than to do the wrong thing.
4. The immediate differential diagnosis of emergencies is difficult for

mains an infected and necrotic mass.

Repair by First Intention — It is, of course, possible to separate the epithelial attachment of a tooth from the gingival epithelium and secure reattachment in surgical procedures such as flap operations for removal of third molars. Here, however, the epithelial attachment is not destroyed by infection and does not proliferate downward. Repair is by first intention.

Typical Pocket Often Results — Many times, however, when infection supervenes after a flap operation, the epithelial attachment is destroyed or does proliferate downward, and a typical pocket, lined with gingival epithelium, results.

Conclusions

The epithelial attachment is destroyed and/or proliferates downward along the root in the presence of infection in periodontoclasia leaving no epithelial tissue attached to the exposed root surface capable of reuniting with the oral epithelium of the gingival crest.

Connective tissue elements cannot survive unless sealed off from external environment by epithelium.

Attachment of the soft tissue wall of a pocket to the surface of a tooth is therefore quite impossible save at the extreme depth of the pocket where the epithelial attachment is intact.

801 Liberty Life Building

the most experienced physician and dentist.

5. Determinations of blood pressure and pulse rate impress the family, give the doctor something to do while the patient improves spontaneously, but are of little informative value during the acute emergency.

6. If you, the patient, or the physician have any doubt concerning the ability of the patient to tolerate an office procedure, the treatment should be done in a hospital.

Adapted from Current Advances in Dentistry, University of Illinois College Telephone Extension Program for 1954-1955, page 46.

A Method to Reduce Pain in CAVITY PREPARATION

H. A. EDWARDS, D.D.S., Pink Hill, North Carolina

DIGEST

The author of this article has used the analgesic procedure described in a series of 300 cases in his own general practice. The results obtained have been highly satisfactory to the patients and to the dentist who finds that with improved patient cooperation time is saved and ideal working conditions are provided.

Characteristics of Analgesic Agent

Trilene® is a brand of highly purified trichloroethylene which provides the most rapid analgesia produced by any anesthetic.¹ The agent possesses the following qualities:

1. It is a clear blue, volatile liquid with a pleasant odor.
2. It is nonexplosive and nonflammable in air or oxygen in the mixtures employed clinically.
3. If its vapor is diluted with air, however, and then exposed to an open flame, decomposition will occur and produce hydrochloric acid and traces of phosgene.
4. When stored in closed containers away from light, it is highly stable but may decompose following undue exposure to sunlight or air.

Apparatus for Administration

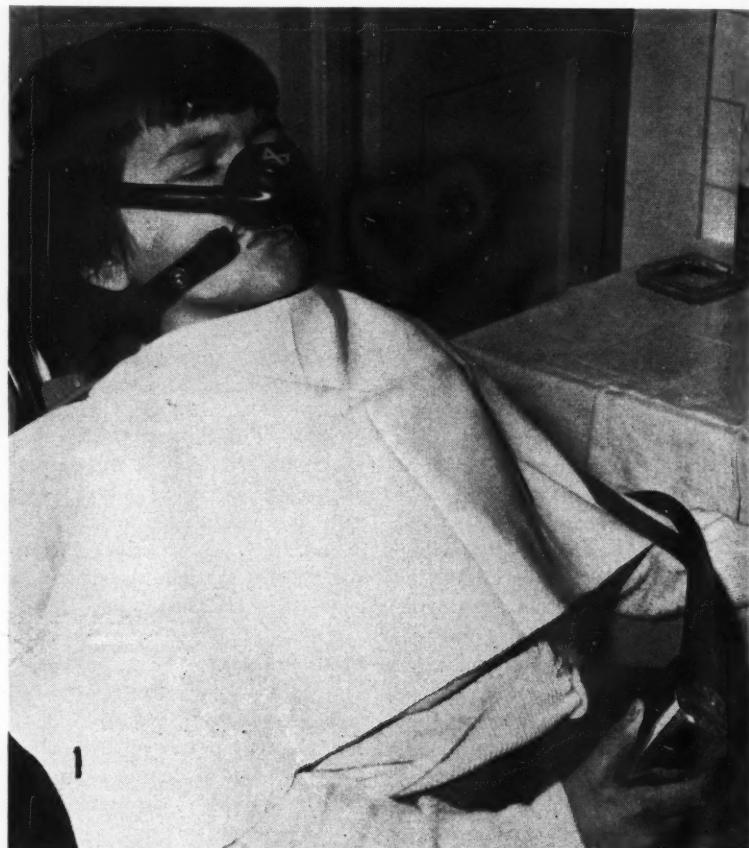
Trichloroethylene is administered with the Duke Inhaler. This apparatus consists of a cylinder and connecting tubes that end in a small mask that fits over the patient's nose. The trichloroethylene is poured into the cyl-

inder which contains a wick. When air is inhaled over this wick, the trichloroethylene volatizes and passes through the tube to the nose for inhalation. The amount of trichloroethylene released is controlled by a regulator on the side of the cylinder. When the regulator is not operated, air is drawn into the base of the inhaler over the source of the vapor and

the patient breathes a vapor and air mixture. When the patient exhales, the expired air passes out into the atmosphere through the exhalation valve.

Procedure

Before treatment is started the procedure is explained to the patient. Confidence is gained at once because the patient willingly accepts any measure that will ensure cavity preparation without pain. His sense of helplessness



1. Apparatus is shown in position.

¹Orth, S. O.: General Anesthesia I, in Drill, V. A.: Pharmacology In Medicine, New York, McGraw-Hill Book Co., Inc., 1954, pp. 5-11.



2. Front view showing the apparatus.

is alleviated by the fact that he can control the administration of the analgesic. The novelty of the apparatus also seems to interest the patient.

Preliminary Steps—Before therapy is started, have the patient operate the machine. This serves three purposes: (1) It removes any doubt as to the efficacy of the method. (2) It accustoms the patient to the odor of the agent and to mechanics of the procedure. (3) The first few whiffs of vapor seem to allay all anxiety in the apprehensive patient.

Anesthetic Increased Gradually—When it is ascertained that the patient completely understands the procedure, he is instructed to advance the thumb-piece gradually to succeeding positions until he shows signs of analgesia.

This is easily determined by testing the patient's gingiva with an explorer. It will be noted that the patient appears to develop an attitude of indifference to being in the dentist's chair.

Patient Remains Conscious—When

the patient reaches the operable stage of analgesia, he will relax the pressure on the thumb-valve and in some cases drop the inhaler in his lap. The patient is not unconscious. He is still able to obey the instructions of the operator. On request he will open his mouth wide and keep it in that position for almost any kind of operation.

Anesthetic Controlled by Patient—About five minutes are required for the operable stage. Treatment can then be started. During treatment procedure, when the patient begins to feel the slightest discomfort, he reaches for the thumb-valve and administers more trichloroethylene to the point of relief. In these intervals the operator can change his instruments and adjust the saliva ejector.

Rapid Return to Normal—When treatment is completed the nosepiece is removed. The patient will return to normal in a few seconds. It is helpful to have the assistant sponge the patient's face with a cold towel.

Results Obtained

The procedure described has been used by the author in general practice for three years in a series of over 300 cases. The results have been highly satisfactory because the patient is cooperative and comfortable and the dentist is able to complete treatment with more speed and less difficulty.

Procedural Speed Increased—It is possible to prepare from three to five cavities at a sitting when they are not too complicated and when there is sufficient time and analgesia to complete the cavity walls. The following table presents the results obtained in this series of cases:

Results	Percentage
No pain or discomfort	75
Slight pain and discomfort	23
Pain and discomfort: inadequate analgesia	1
No effect	0.5
Dislike of the vapors and/or administration	0.5
Total	100.0



3. The patient is in a relaxed position while the operation is being performed.

Successful Results in 98 per cent of Cases—With trichloroethylene analgesia 75 per cent suffered no pain or discomfort from the procedure; 23 per cent had slight pain and discomfort. In none of these cases, however, was it necessary to administer, nor did the patient request, local anesthesia. In 1 per cent of the cases analgesia was insufficient; in 0.5 per cent of the cases no analgesic effect at all was noted; and in 0.5 per cent the patients objected so seriously to the vapors and/or administration of the trichloroethylene that a local anesthetic was used. This method of analgesia proved

successful in 98 per cent of the cases.

Few Side Reactions—There were relatively no side effects from the therapy. One patient complained of smarting of the nasal pharynx and in another excessive salivation was observed. These results are in accord with the findings of Yein, et al.², and Georgiade, et al.³ that trichloroethylene does not produce an increased

²Yein, C. S.; Teuscher, G. W.; and Karp, M.: Quart. Bull. Northwestern Univ. M. School **26**:180 (Summer Quarter) 1952.

³Georgiade, N. G.; Stephen, C. R.; and McFarland, W.: To be published.

⁴Agatston, A. S.: Trichloroethylene in the Control of Pain in Dentistry, *Dental Concepts* **4**:10-13 (Apr.-May) 1952.

⁵Swartz, W. B.: Paper Read before the Oklahoma Society of Anesthesiology, (May 18) 1952.

tendency to bleed or the capillaries to ooze. It also corroborates the conclusions of Agatston⁴ and Swartz⁵ that the agent does not usually produce excessive salivation or mucus secretion. Almost all of the patients who have returned for additional treatment who have experienced the use of trichloroethylene previously for cavity preparation have requested reuse of the procedure.

Comments

Broad Application—Trichloroethylene provides a method of painless cavity preparation because its administration is painless and it provides adequate analgesia when used correctly. It can be administered to all patients and has been found to be especially valuable in children. Patients as young as eight years have used it with no complications.

Patient Cooperation Ensured—The analgesia provided, the relief of the tension and anxiety, and the knowledge that he controls the prevention of pain are important factors in patient cooperation.

Advantages to Operator—The dentist has a clearer field in which to work and can be more thorough. The time consumed in explaining the mechanism of the Duke Inhaler is usually no greater than the preparation and injection of a local anesthetic. The cooperation of the patient allows the dentist to accomplish more at one sitting.

Quick Recovery—Trichloroethylene has little or no side effects, and after completion of the treatment, the patient recovers in a few minutes with no after effects.

Contraindications—The inhaler leaves something to be desired in its relatively complicated state of draping tubes. It cannot be used in combination with epinephrine; atropine, however, may be used with impunity. It should not be used with patients who are unable to comprehend the operation of the inhaler.

Pink Hill
North Carolina

The CLEFT PALATE

Rehabilitation Team

HOWARD E. KESSLER, D.D.S., Cleveland

DIGEST

During the past 15 years increased interest in persons who have cleft palates and hare lips has been shown by the dental and medical professions, the speech therapy profession, welfare groups, and the public in general. The research involved and the special attention given it have been of aid in dealing with this problem and as a consequence improvement in cleft palate rehabilitation is in general evidence. This article is a report on the improvement noted in the cleft palate rehabilitation program of a large city school system during the last seven years.

Surgery Performed by Specialists

The majority of cases of surgical repair are now operated on by specialists in the field of oral or plastic surgery. This was not true seven years ago. At that time general surgeons performed many of the operations. The fact that specialists in this type of surgery are now doing most of the operations accounts for the improvement in the caliber of surgery performed. Most present day parents recognize the value of the team ap-

proach in diagnosing and treating these cases and ask to be referred to cleft palate rehabilitation teams.

Associated Limitations

The child with a cleft is usually speech defective; he has biologic limitations in mastication and deglutition; he is imperfect in appearance; the esthetic defect and the speech abnormality often produce a personality defect; his general health is affected because of difficulty in mastication and deglutition; and because of malnutrition he suffers an increased number of colds and other respiratory ailments. It is apparent that the child

Approximate Percentage Of Cases

Although the total public school population in the city of Cleveland is approximately 110,000, the figures used are usually based on cleft palate cases in elementary grades and kindergartens only, approximately 80,000. The reason for this is that a large percentage of harelip and cleft palate children drop out of school when they reach high school levels because of personality problems and psychic trauma. The ratio shown, therefore, of children with cleft palate and/or harelip is approximately one in 950. This figure has remained fairly constant during the past seven years in which cleft palate study has continued.



1. Close-up of double harelip and cleft palate.

with a cleft is usually in need of *total* rehabilitation and not just the services of one or two specialists.

Coordinated Treatment Plan Preferred

The project of total rehabilitation is obviously too extensive for any one specialist to undertake. The best results are achieved when all of the related specialties are utilized in the proper sequence. In this way fully coordinated therapeutic planning is possible. This plan will allow for the child's natural development and will include perfect timing for each step in the rehabilitative procedure.

Members of a Therapeutic Team—A team of this kind consists of the following specialists: a surgeon, a speech therapist, a dentist, a pediatrician, an orthodontist, an otolaryngologist, a prosthodontist, and a psychiatrist.

Satisfactory Results Achieved Routinely—Cleft palate rehabilitation teams of this type are now routinely achieving results that years ago were extremely rare. In early treatment, one aspect, such as surgery, was often good while other aspects, speech, for instance, or physiologic function did not equal the satisfactory surgical results. Each specialization has something of value to offer but none by itself can completely rehabilitate the patient.

Method of Team Work

A patient who has a cleft palate and/or lip is presented to the assembled specialists, each of whom examines the patient minutely, employing all the necessary techniques. Subsequently, the team collates the various diagnoses and prepares a therapeutic plan for the patient. Each specialist argues his particular point of view and from all the opinions and findings is evolved a perfected therapeutic plan which will transform the patient into a normal person.

Age for Operation—The time chosen for surgery is a controversial question but in general a cleft lip is operated on from eight to twelve weeks after birth when the infant has regained the birth weight. A cleft palate is usually not operated on until the age of



2. Close-up of unilateral harelip and cleft palate.



3. Case of "insufficient soft palate." The surgeon closed over the anterior portion of the palate but did not give the palate proper length so that the child could speak normally. This child still has typical "cleft palate speech" and is a candidate for a Dorrance Push Back operation or a palatal-pharyngeal flap operation.

two to four years. One reason for the palatal closure age is to avoid interference with the normal growth pattern of the jaw. Another reason is that immediately after birth the palatal tissues

are more difficult to work with because of size and the problem of anesthetic in a tiny infant.

Ages for Surgery Vary—The surgeon may feel that in a particular case

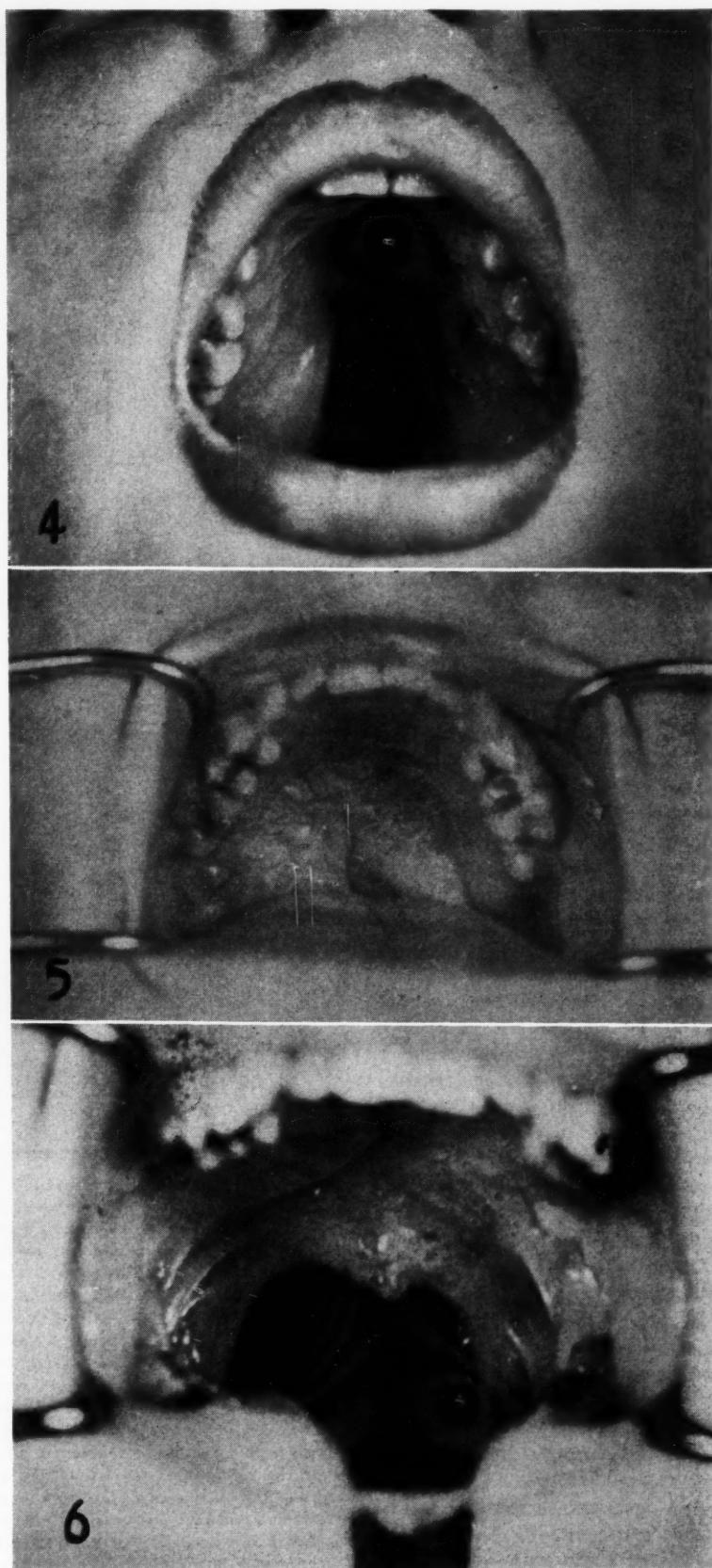
he can achieve a better esthetic result on the lip if he waits until the child is a little older. The surgeon must confer with the pediatrician to ascertain if the infant will be able to get enough nourishment with the lip in cleft condition. In many of these patients the food and drink returns through the nose as fast as it is put in the child's mouth because of the opening. The surgeon may also wish to consult the psychiatrist for knowledge of the mother's attitude to the untouched cleft on her baby. After deliberation the team may decide that the surgeon must close the lip immediately before the mother sees the child.

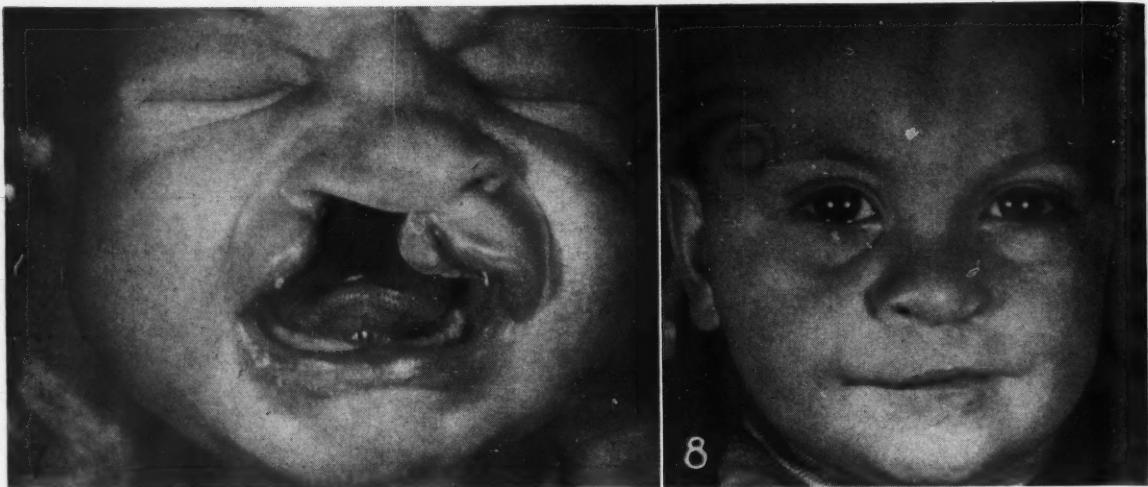
Use of Obturator—If surgery is not possible for a particular cleft, a plastic obturator is made by the prosthodontist. The feasibility or impossibility of surgery is often a subject for debate. The prosthodontist believes that closing the cleft by the use of an artificial aid is preferred because there is less possibility of tissue mutilation and haphazard movement of tooth buds. The surgeon, on the other hand, may believe that living tissue is the best choice for closure of the cleft. Both must abide by the collective diagnosis of all the specialists, who as a group, have studied the patient's total problem.

Specific Roles of Members Of Group

The general dentist on the team must consider and advise concerning the restoring, capping, and general retaining of the patient's teeth. Crooked teeth in these cases are often the result of the tooth buds being unavoidably moved about during corrective surgery. The teeth in the mouth of a cleft palate patient are also often in extremely poor repair.

4, 5, 6. Figure 4 shows a cleft palate in a 20-year-old girl before surgery. Figures 5 and 6 show the same case after corrective surgery. Figure 5 shows the anterior part of the palate. Figure 6 shows the soft palate of proper length and flexibility. The patient's speech is now normal. (Courtesy of Edward Reiter, D.M.D., Director of Cleft Palate Clinic, Mt. Sinai Hospital, Cleveland, Ohio.)





7 and 8. Figure 7 shows a cleft palate and harelip case before surgery. Figure 8 shows same case after surgical re-

pair (Courtesy Edward Reiter, D.M.D., Director of Cleft Palate Clinic, Mt. Sinai Hospital, Cleveland, Ohio.)

The general dentist has not always been happy to undertake treatment of the teeth in a child with a cleft palate for many of these children have endured such extensive surgery and repeated examinations that they are unsatisfactory patients in the dental chair.

Teeth Often Neglected—It was formerly thought that in many cases the crooked, malformed teeth in these mouths were not worth saving. As they were not in proper position to serve as chewing units they might as well be permitted to deteriorate until they were finally extracted. Another result of the unconventional angulation of the teeth was great difficulty in cleaning the teeth which encouraged caries.

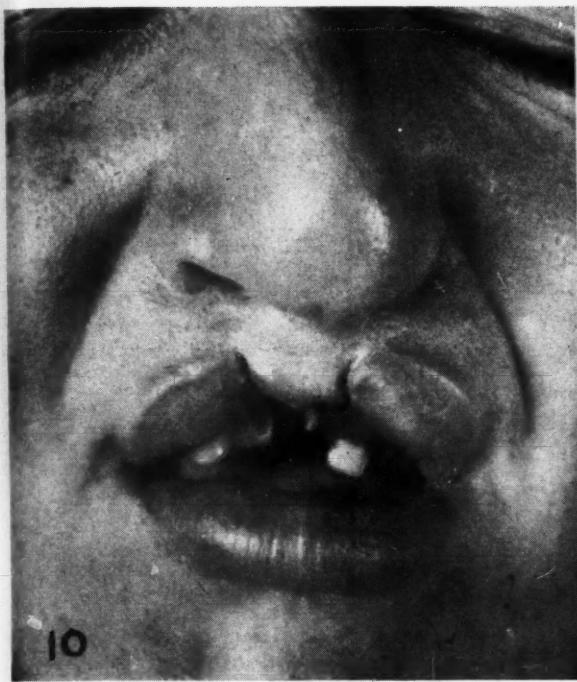
Importance of the Teeth—Generally speaking, all of the teeth of a child with a cleft palate are important, no matter where they erupt. A single tooth which has erupted toward the center of the palate may be important as an anchor to help retain in place a prosthetic appliance used to cover the cleft. When these teeth are utilized in the retention of an obturator, the dentist usually covers them completely with cast gold crowns in order to increase their resistance to caries and breakdown later.

Role of Orthodontist—Almost all

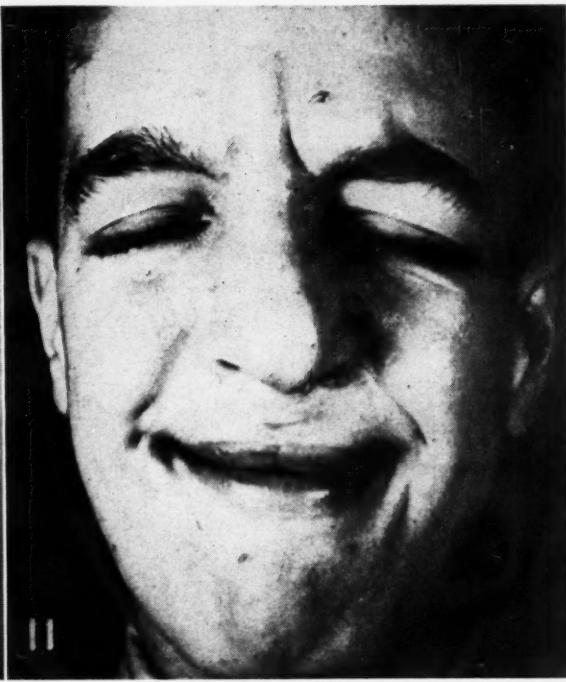


9. Child with a posterior-pharyngeal flap. This child's speech is now normal. The first step in the construction of a posterior pharyngeal flap is the formation of the flap outline. The rigid soft palate is retracted forcibly to enable the surgeon to make a transverse incision through the pharyngeal mucosa at an extremely high level. Both ends of the transverse incision are connected by two parallel vertical incisions involving almost all of the posterior wall of the pharynx. The mucosal incisions are then extended down through the muscular fibers of the superior constrictor of the pharynx and a full, thick, muscular flap is elevated by blunt dissection and turned posteriorly.

The second step in the operation involves the creation of a raw surface on the oral side of the soft palate. The oral epithelium of the soft palate is dissected to form a bed for the attachment of the pharyngeal flap. The pharyngeal flap is sutured to the raw surface of the soft palate through the use of mattress sutures. The pharyngeal flap then becomes a partition between the oral and nasal cavities which prevents the escape of air through the nose and helps the patient in the execution of good speech. (Courtesy of Edward Reiter, D.M.D., Director of Cleft Palate Clinic, Mt. Sinai Hospital, Cleveland, Ohio.)



10. A lip repair with poor result from the esthetic standpoint.



11. The same case after corrective surgery. The vermilion border of the lip is now even and the appearance is much improved.

cases of cleft palate require some orthodontic service or advice. The orthodontist must decide whether the investing structures of the teeth are secure enough to withstand the moving of teeth or whether the surgically acquired palate is strong enough to permit a widening of the arch. At the line of the cleft one or more teeth may be absent, or in some cases, an extra tooth may be present in this area. All of the dental specialists usually present a combined opinion in these cases.

Importance of Otolaryngologist—A large number of children with repaired or unrepaired cleft palates have hearing deficiencies of varying degrees. The clue to these hearing losses is found in the physiology and anatomy of the relationship between the middle ear, nose, and throat. During swallowing, the soft palate normally prevents food and liquids from entering the nasal passages. When a cleft is present there is nothing to prevent food and liquid from entering the nasal passages and coming out the nose. Two small openings leading to the eustachian tubes are located on

the sides of the throat a little above and in back of the soft palate. These tubes communicate with the middle ear and serve to maintain middle ear pressure the same as outside ear pressure. The membranes of the nose tolerate bacteria of various types but the membrane lining the tubes and the middle ear are less immune. Persons with cleft palates therefore tend to have some hearing loss and middle ear infection. The otolaryngologist takes all these facts into consideration during group consideration of the method and time for closure of a cleft palate.

The Pediatrician—The general health of the child is referred to the pediatrician who advises whether the child with a cleft palate or lip can tolerate surgery or whether he must be given time for a physical build-up.

Speech Therapist as Moderator—Virtually every case of cleft palate presents a speech defect problem. The speech therapist is therefore a highly important member of the team. The speech therapist often acts as the moderator of the team in somewhat the same way that the pathologist some-

times acts as the moderator between the radiologist and the surgeon in a cancer clinic. The speech therapist develops a greater knowledge of the patient and spends more time with him than do the other members of the team.

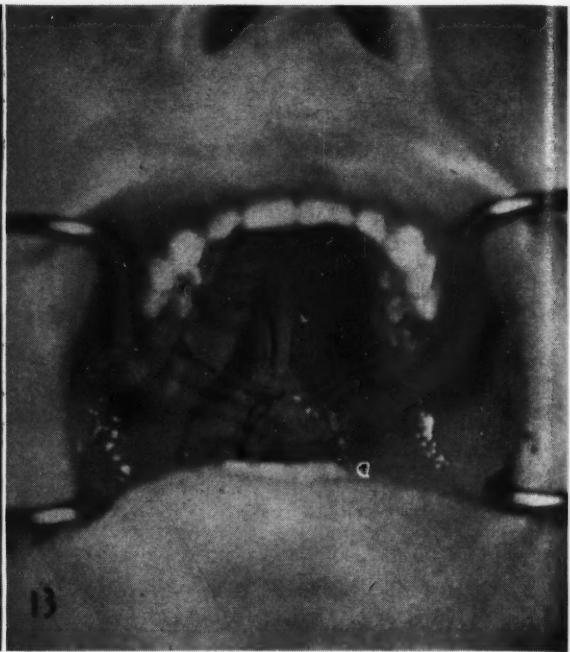
Additional Responsibility of Speech Therapist—Normal speech usually cannot be achieved until a certain amount of separation is established between the nasal and oral cavities of the cleft palate patient. Separation may be established by the use of living tissue or an artificial material. No matter which method is used the patient usually needs speech therapy for some time after the closure is perfect. The speech therapist also advises the group whether therapy should be given the patient before the cleft closure is attempted in order to provide advance knowledge of the speech problem.

The Psychiatrist—A valuable addition to the team is the psychiatrist who can often select the proper time, psychologically, for surgery, physical factors being equal.

Religious Advisor—Some cleft pal-



12. An exceptionally wide open cleft palate with not much tissue to work with. This boy had worn an obturator at one time but his speech was not good.



13. The same boy after surgery. (The sutures are still in place.) The boy's speech became normal some months after this. (Courtesy Edward Reiter, D.M.D., Director of Cleft Palate Clinic, Mt. Sinai Hospital, Cleveland, Ohio.)

ate teams have added the services of a religious advisor to aid in dealing with the emotional problems of the patient with a cleft. He often calls upon the mother of a newly born infant with a cleft palate to convey the news of the infant's imperfection as gently as possible. He is sometimes accompanied by another mother of a child with a cleft palate who assists in the reassurance that these children can be developed into well-adjusted, healthy persons.

Problem Considered as a Whole

The cleft palate victim is a whole person; he is not a surgical problem alone; he is not merely a speech problem; he is not primarily a prosthetic

problem; he is not simply a psychologic problem. He is a person, a total person in need of all the help that can be mustered from the entire team of specialists working toward a single solution, complete rehabilitation.

Satisfactory Dental Conditions

At the present time the records of the Cleveland study do not show a single case of a cleft palate child with poor operative dentistry in his mouth.

Financial Aid Available—Children with cleft palates were formerly not classified as "crippled children" in connection with financial aid. Many cleft palates are found among impoverished families. Lack of funds was often a handicap, therefore, to rehabilitation. Cooper¹ states that Pennsylvania was "one of the first states in

the United States to establish a comprehensive program for the complete management of cleft palate cases," and "several other states are following the same policy."

Conclusion

Cleft palate is one of the most prevalent congenital deformities. There is no reason therefore why the public should not be as well informed about this condition as about cerebral palsy or poliomyelitis. It is in this way that improvement continues to be made in treating cases of cleft palate and/or cleft lip.

*Park Building
Public Square*

RADICULAR CYSTS

of Traumatic Origin

GABRIEL WEISS, D.D.S., Philadelphia

DIGEST

In the case histories discussed in this article, examination made much later showed that unknown to the patient concerned, cysts had formed after an earlier traumatic injury to a tooth. The success of the treatment applied later in these cases demonstrates that at the time of any injury to the teeth careful examination, clinical and roentgenographic, is important. Continued regular observation in these cases is also extremely valuable.

Formation of Radicular Cysts

According to Robinson,¹ "The periodontal or radicular cyst is one formed in the periodontal membrane usually at the root end of a pulpless infected tooth. The epithelial lining is derived from the epithelial rests (usually remnants of the sheath of Hertwig). They are commonly the sequels of dental granulomata in which either resting or proliferating epithelium is a constant finding."

Lesions Encapsulated—These pathologic lesions are usually encapsulated by a distinct membrane consisting of the epithelial lining together with a connective tissue capsule within which is found a fluid or semifluid material.

Development of Cysts from Trauma—When teeth are subjected to a traumatic injury severe enough to devitalize their pulps, radicular cysts may develop in time. Thoma² states,

¹Robinson, H. B. G.: Classifications of Cysts of the Jaws, Am. J. Orthodont. 31:370 (June) 1945.

²Thoma, K. H.: Oral Pathology, ed. 2, St. Louis, C. V. Mosby Company, 1944, p. 771.

"A history of trauma, accompanied by temporary pain and swelling is significant. Patients will often present themselves for examination complaining of dull pain or pressure in the affected area. Others may have a disagreeable taste or odor in the mouth due to the cystic contents escaping through a fistula. Careful questioning is necessary as the patient may not associate his present condition with an accident that occurred some time ago."

Careful Examination Important—The x-ray generally serves to detect these cystic areas and show their relative size, position, and the amount of bone destroyed. It therefore becomes imperative to examine patients carefully as soon as they report having had a traumatic injury to their teeth.

Continued Observation Necessary—If the roentgenograms are negative at first, the importance of careful roentgenographic studies of a follow-up nature should be stressed, perhaps every three months the first year and every four months the second year following injury. Subsequently, it will suffice to examine the patient once every six months. In this way the extensive damage caused by neglect can be prevented.

Case Report One

The patient in this case, a boy of 16, presented after being hit on the mouth during a "school-boy tussle." His chief complaint was that of pain in the anterior right maxilla. He thought he had broken a tooth.

Clinical Examination—(1) It was revealed on examination that the maxillary right lateral incisor had been

completely depressed in its socket so that only the incisal edge was visible at the gingiva.

(2) The teeth on either side, that is, the right central incisor and cuspid showed signs of mobility.

(3) The mucosa and gingival tissues surrounding these teeth were hyperemic and somewhat edematous.

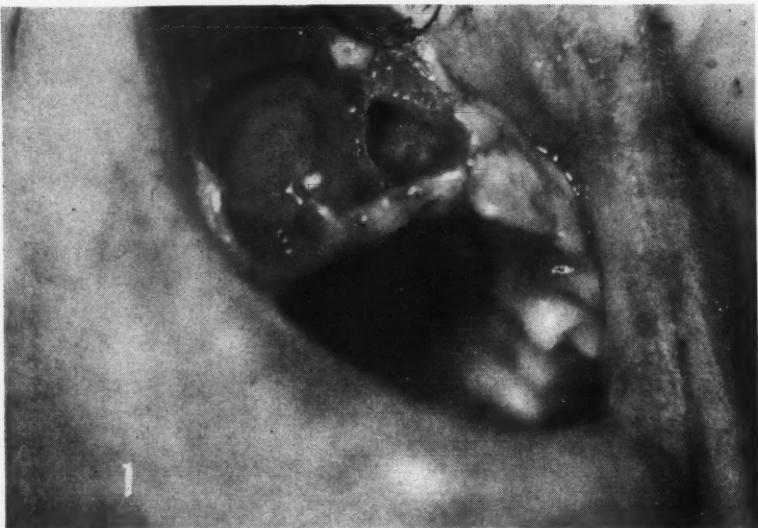
Previous Injury Sustained—Upon questioning the patient, it was learned that two years previously he had been hit on the mouth with a basketball. At that time, no visible injury had resulted and a dental examination revealed nothing. During the ensuing years no further dental care was given, nor were x-ray pictures taken.

Roentgenographic Examination—The presence of a large cystic area involving the right central and lateral incisors and the cuspid was revealed by roentgenographic examination. As a result of the recent trauma, the lateral incisor had been depressed vertically in the cystic cavity due to the extensive bone destruction.

Therapy—It was decided to remove the three involved teeth and to perform a complete cystectomy (Figs. 1 and 2). As a result of the massive cyst with accompanying bone destruction, the area healed with a slight depression on the buccal surface. This was later corrected by the prosthesis used to replace the missing teeth.

Case Report Two

A girl of 14 presented complaining of pain and "swelling of the gum" in the area of the mandibular incisors. Questioning revealed that the patient had fallen against a window sill about two years previously and had sustained a traumatic injury to



1 and 2. It was decided to remove the three involved teeth and perform a complete cystectomy.

the teeth in question. From that time until the present she had not had any symptoms whatsoever and no dental care had been rendered.

Clinical Examination—(1) A slight swelling of the buccal mucosa overlying the apex of the mandibular first incisors was revealed (Fig. 3).

(2) There was evidence of hyperemia in the area with a fistulous open-

3. A slight swelling of the buccal mucosa overlying the apex of the mandibular incisors was revealed on clinical examination.

ing in the center of the swelling.

(3) Upon further examination the four mandibular incisors appeared to be sensitive to pressure and exhibited some slight mobility.

Roentgenographic Examination—Radiologic study revealed a large irregular granulomatous mass, involving all of the mandibular incisors, with resultant loss of bone (Fig. 4).

Therapy—Because of the youth and excellent health of the patient, it was decided to attempt a quadruple apicoectomy in an attempt to save the four mandibular incisors. The following steps were taken:

(1) The first step was reduction of the acute condition. This was accomplished under local anesthesia by opening the four involved teeth from the lingual aspect.

(2) The root canals were cleaned out and enlarged to establish drainage.

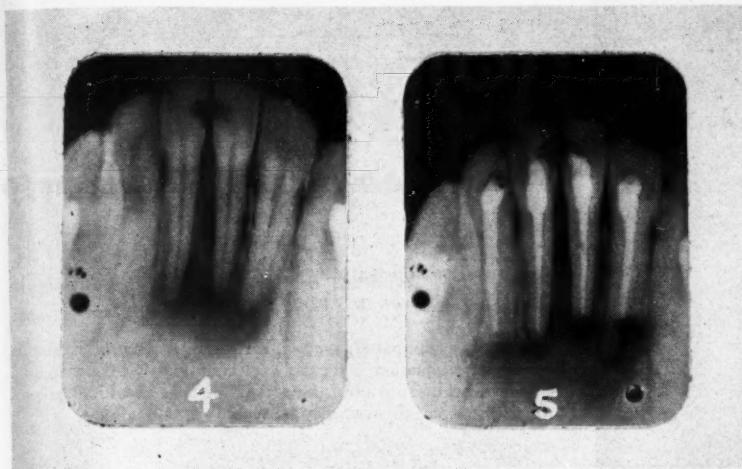
(3) Parenteral injections of penicillin (600,000 units per day) were used for three days.

(4) With the subsidence of the acute symptoms, apicoectomies were performed on the fourth day. A mucoperiosteal flap was made, exposing the apical area around the four incisors.

(5) The granulomatous mass was exposed. It was then removed completely by curettage of the area.

(6) The root canals were cleaned out and filled after which the apices of the teeth were amputated by angu-





4. Radiologic examination revealed a large irregular granulomatous mass involving all of the mandibular incisors with resultant loss of bone.
 5. The patient was seen 90 days after surgery and at three-month intervals thereafter.

lar cutting with as little additional bone loss as possible.

(7) After the ends of the teeth were sealed, the area was irrigated with sterile water, the mucoperiosteal flap returned to position and sutured in place.

(8) A postoperative roentgenogram was taken.

(9) Six days after surgery the sutures were removed.

Results of Therapy—The patient was seen postoperatively at 90 days (Fig. 5) and at intervals of three months thereafter. As shown in the roentgenograms, the bone has been filling in with the resultant tightening of the teeth. After one year, the teeth are in normal use and the patient is in perfect health.

Summary

It may be assumed that the original traumatic injury to the teeth in the cases described caused their devitalization with the resultant cystic formation since no dental treatment, including roentgenographic examinations, was rendered. In the years intervening between the original injuries and present treatment, these radicular cysts grew to their present proportions without the patients being aware of their presence. As a result of this neglect, excessive damage occurred. The cases discussed, therefore, demonstrate the necessity of repeated dental examinations including radiographic studies after any traumatic injuries to the teeth or jaws.

2119 Spruce Street

Should Thumb-sucking Be Stopped and, If So, When?

Major Comment

This subject is highly controversial. All dentists, but not all pediatricians, think it should be stopped.

The time for interception may be as follows:

- (a) Early (up to 1 year)—close sleeves of night clothes.
- (b) Use of solutions painted on thumb.
- (c) After 4 years—construct a lingual arch appliance, destroying suction. Do not use stickers.

In addition, talk to the child and explain what the habit may cause.

Diet and Tooth Composition

John Haldi, Winfrey Wynn, Mary Louise Law, and Katherine Dickey Bentley

Summary and Conclusions

The postnatal effects of a high-sucrose, high-protein, high-fat diet on the mineral composition of the teeth of albino rats were studied by feeding these diets for a period of 150 days from weaning. The mothers of these animals had been fed only a stock diet.

The prenatal effects were studied by feeding these diets to animals whose mothers had been raised on these diets and fed the same diets during pregnancy and lactation.

The preponderance of any one of the major foodstuffs in the diet had neither a prenatal nor postnatal influence on the mineral composition of the teeth.

The greater cariogenicity of the high-sucrose as compared with the high-fat and high-protein diets which had been demonstrated previously, can not therefore be ascribed to any changes induced in the mineral composition of the teeth by a preponderance of sucrose in the diet.

From *Journal of Nutrition* 57: 222 (Oct. 10) 1955.

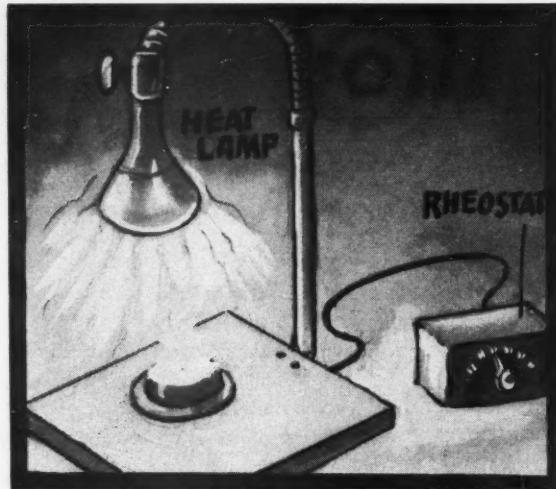
Added Comment

Always remove the parent while talking to the child.

Tell the parent not to heckle the child, but to ignore the habit.

It is believed that the pediatricians are coming over to the dentists' viewpoint.

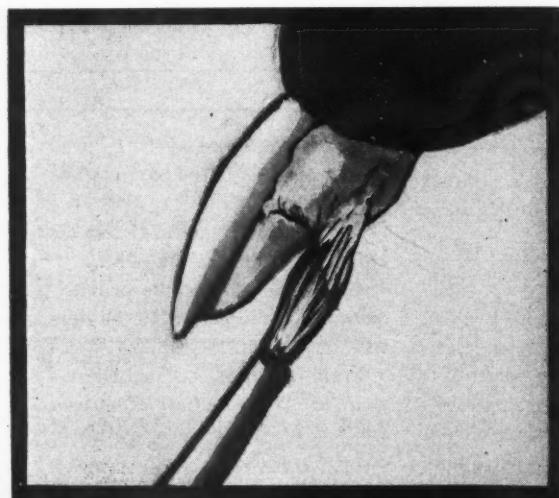
From Editorial, A Panel Discussion of Orthodontics, *American Journal of Orthodontics* 40:386-387 (May) 1954.



1



2



3

Clinical and Laboratory

Wax Pattern Adaptation

Frank J. Brauer, Lieut. (DC) USN

1. To soften wax patterns, clasp, bar forms, etc., to the right consistency for adaptation, a regular heat lamp aids in giving an even amount of heat. To control the amount of heat and the degree of softening, a small rheostat may be placed in the circuit.

Prevention of Gingival Seepage

Sam R. Adkisson, D.D.S., Conway, Arkansas

2. To prevent seepage of moisture or "weeping" tissue at the gingival margin of a cavity preparation during operative procedures, apply a few drops of neutralized Superoxol® (30 per cent hydrogen peroxide) to the interproximal gingival tissues for 30 seconds. To neutralize the Superoxol® which is preserved in an acid solution, add 7 drops of 5 per cent sodium bicarbonate solution to 12 drops of Superoxol® prior to use.

Protection for Three-quarter Preparation

A. J. Nenahbo, D.D.S., Beloit, Wisconsin

3. The preparation may be protected between appointments by covering it with self-curing acrylic applied with a brush.

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or SUGGESTIONS . . .

Removal of Wax Drippings from Clothing

Harold Miller, D.D.S., New York

4. Place a piece of plain white paper over the wax dripping on the clothing. Rub a hot flat spatula over the paper. The wax will melt and be absorbed by the paper.

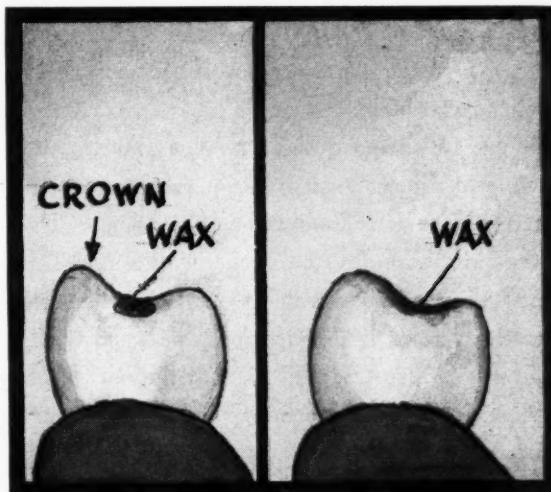


4

Seating a Full Cast Crown

Edward Bressman, D.D.S., Irvington, New Jersey

5. To determine if a full cast crown is completely seated, place a piece of carding wax the size of the head of a pin on the under surface of the occlusal. Seat the crown. If the wax is completely flattened the crown is in position.

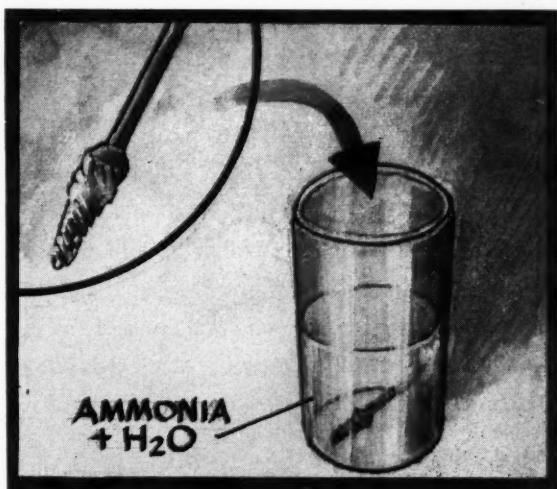


5

Cleaning Burs

William E. Castle, D.D.S., Lockport, New York

6. To remove debris from burs place in jar of ammonia water for 30 minutes. This eliminates scrubbing of the burs with a brush.



6

technique involved; and jot down the advantages of the technique. This shouldn't take ten minutes of your time. Turn to page 86 for a convenient form to use.

Send your ideas to Clinical and Laboratory Suggestions Editor, DENTAL DIGEST, 708 Church Street, Evanston, Illinois.

The EDITOR'S Page

EVERY TIME that a dentist and a patient meet, two personalities come together. The blending of the two may be smooth and in full rapport. Or the meeting of the two may be traumatic to one or both.

What is this trait of human life that we describe as the personality? What does this term that we all use so glibly really connote? It may mean that a human being reacts to another person by some kind of over-all response in which he makes a quick or more delayed evaluation. We are inclined to render these personality judgments quickly and often without a full appraisal.

Some personalities are more generally acceptable than others. The skill of politicians, clergymen, actors, for example, to "get over" to the public is their most valuable asset. There are other persons who are full of good *character* but who are either unable to project a favorable personality or erect barriers that deny their public acceptance. There are dentists who are rich in character and skill but who have never been able to establish a successful practice because of deficiencies in personality. The converse is also true: the case of the one favored with an acceptable personality and weak in character or skill.

Most of us have been vaguely entangled when we have attempted to give definition to the term personality. We are all aware that some such quality exists but we are not too sure what this quality includes. Turning to a British psychiatrist we get a clearer picture:¹

"For scientific purposes, personality includes all the psychological features which make the individual the person he is—his attitude to others, his interests and abilities, the way he deals with everyday situations, his consistency or his unpredictability, his habitual mood and so on. We think of the person as having a certain pattern of inner psychological forces which make him present his character-

istic front to the outer world. This pattern is not normally rigid but shows a capacity to adapt to changing circumstances. Above all, the term is a dynamic one; that is to say, it refers essentially to the forces which lead the individual to seek certain goals and to the psychological resources he has for reaching these. We cannot understand his personality unless we know what the individual is seeking, consciously and unconsciously, and what are his abilities and characteristic ways; it is this dynamic aspect that is so apt to be lost in the typologies."

A static or rigid personality is not equipped to adapt to changing circumstances. Adaptation means intelligence, not vacillating weakness of character. The adaptive personality does not carry a cargo of preconceptions around with him. He is prepared to evaluate every situation as it arises and act on the assumption or evidence that is presented. Often our judgments may be based on emotions rather than reason.

There are also fixed values that are reflected in habitual moods, methods of expression, overt behavior, attitudes. These values are probably built on familial patterns, environment forces, and also on biochemical and nervous structures and functions. The personality, therefore, is a complex of what we were born with, what we absorbed from our surroundings, how our endocrine glands and our nervous systems operate.

There are certain rough landmarks that distinguish a personality along a trajectory of time; a certain constancy of pattern throughout life. Fortunately the power of will and the opportunity of choice give man the ability to change his personality by effort and design. Each of us has the chance to improve his own inner psychologic forces and also those façades that we show to the world.

The dentist who deals so intimately with people under conditions of some psychologic stress should equip himself to know more and more about the well springs of the human personality.

¹Rees, J. R.: *Modern Practice in Psychological Medicine*, New York, Paul B. Hoeber, Inc., 1949, p. 96.

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Nerve Block in Pain From Cancer

Nerve blocks are of value in controlling the intractable pain caused by neoplastic disease. In the initial mild pain of cancer (1) narcotic analgesics, (2) cobra venom, and (3) intravenous administration of alcohol and nonnarcotic analgesics, particularly acetylsalicylic acid, when combined with hypnotics are valuable. Later, when pain becomes persistent, the use of narcotic analgesics is again helpful.

Unfortunately, the effectiveness and ease of administration of narcotic analgesics are conducive to improper use. The practice to "snow the patient under because the end is inevitable" denotes lack of understanding.

It is difficult to estimate the length of life. The following conditions may, therefore, develop: (1) premature addiction with stupefaction, (2) respiratory depression, (3) headache, (4) anoxia, (5) nausea, (6) vomiting, and (7) cachexia. The patient may not obtain adequate relief in the late stages of cancer when comfort is so essential. This is due to the development of a tolerance.

If the patient is in good physical condition, neurosurgical operation may be employed to insure prolonged relief. (1) Rhizotomy, (2) sympathectomy, (3) spinothalamic chordotomy in the upper spinal cord or brain stem, and (4) prefrontal lobotomy relieve intractable pain effectively. These operations impose mental, physical, and financial burdens and may cause serious complications. Occasionally they result in failure.

Nerve blocks are primarily indicated for patients who are unsuited or unwilling to undergo surgical procedures. For pain of the face, mouth, tongue, throat and neck, injections of alcohol into the trigeminal nerve or its branches, the glossopharyngeal and vagus nerves and/or the upper cervical spinal nerves are usually effective. Pain below the neck can be controlled for weeks or months with subarachnoid alcohol block, paravertebral block or injections into the peripheral or intercostal nerves.

M E D I C I N E

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Since the sympathetic nervous system is often involved in the pain mechanism, sympathetic nerve block may be necessary to control pain completely. Over 50 per cent of patients obtain complete relief. Minor complications occur in about 20 per cent. These include: (1) corneal ulcers, (2) unilateral masticatory weakness, (3) weakness or paralysis of extremities, (4) bladder or rectal dysfunction, (5) alcoholic neuritis or (6) orthostatic hypotension.

Bonica, J. J.: Management of Pain of Malignant Disease with Nerve Blocks, Anesthesiology 15:280-301 (May) 1954.



Hemangiomas

Surgery is generally necessary to destroy hemangiomas. Occasionally conservative treatments reduce the lesion and thereby simplify the operative procedure.

The capillary hemangioma is most frequently found about the face and neck. It is superficial and consists of dilated capillaries. When the lesion is not extensive, the skin color varies from pale bluish red to dark purple.

The skin texture is normal. Generally, the use of cosmetics to conceal these lesions is more satisfactory than surgery, radiation, destruction by carbon dioxide snow or tattooing.

Usually surgery is advantageous for isolated lesions on the side of the face or neck. The loose skin edges can be approximated after excision of the tumor without distorting facial contour. Lesions involving a large area on the lower sides of the face may also be excised, since a broad skin flap can be shifted from the side of the neck or from the postauricular region for repair. Operation is often satisfactory for elderly patients when the loose normal skin is used to replace the entire or greater part of the capillary hemangioma.

Surgery is performed for venous or strawberry marks. These are elevated and sharply outlined from the surrounding tissue. The skin over the lesion is thin and dark bluish red. The tumor is readily compressible and bleeds easily when traumatized.

Surgery is employed for adult patients with strawberry marks. Repair is obtained by pedicled flaps from surrounding healthy skin or by skin grafts. Radiation therapy should be used for children, but surgery is also necessary later to correct the resulting surface deformity.

Nearly all cavernous hemangiomas are formed by large irregular blood spaces that are connected. When the tumor is localized, as around the lips, the area is elevated and skin or mucosa is blue and readily compressible. If the mass is diffuse and deep seated, color changes are less evident. Sometimes a definite pulsation suggestive of arteriovenous aneurysm is felt and the skin has a pinkish hue.

Localized cavernous hemangiomas, especially among adults are best treated by surgery. For diffuse lesions, roentgen ray therapy, a sclerosing solution or electrocoagulation reduces the growths and simplifies future surgery. Occasionally the operative procedure is precluded.

The greatest danger with surgery for hemangioma is hemorrhage. It can be controlled by ligation of afferent and efferent vessels or by tying

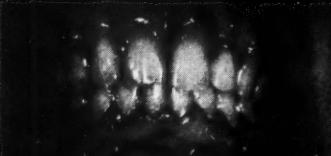
IMPORTANT

review of chlorophyll therapy

A recently published appraisal,* covering twenty-five years' experience in the medical field, strongly confirms the value of topical chlorophyll therapy. Dental practitioners will be interested to note that clinical opinion is in agreement on these points:

- "Chlorophyll" [CHLORESIUM]...promotes the growth of healthy granulation tissue."
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Samples and literature available upon request.

*Smith, L. W.: The Present Status of Topical Chlorophyll Therapy, New York J. Med. 55:2041 (July 15) 1955.

Rystan company. Mount Vernon, New York

24355

off or occluding the main arteries to the tumor. Electrocoagulation is also valuable but should be used with caution.

Kazanjian, Varaztad H., and Roodenian, Aram: Clinical Experience in the Treatment of Hemangioma, Plast. Reconstruct. Surg. 13:325-340 (June) 1954.



Abnormal Weight and Pregnancy

Both underweight and obesity at conception can be considered as obstetrical hazards. For the underweight, the problem is prematurity. For the obese, the problem is prolonged labor and inertia.

These risks of pregnancy arise from interrelated dysfunctions of metabolism and physiology. Instead of relying upon emergency, symptomatic measures after the event, early correction of the patient's nutritional status should be undertaken.

Among the underweight, predilection to prematurity is increased if the patient loses weight or fails to gain at the average rate. Remedial measures such as vitamin supplements and added dietary protein should be instituted early because the pattern for spontaneous premature labor is unlikely to be altered after the second trimester. At least three times the daily dietary allowance for nonpregnancy is recommended to meet the needs of gestation.

A low initial hemoglobin is associated with an increased probability of premature labor. The baby is especially likely to be premature if a patient is both underweight and anemic at the start of pregnancy.

Babies of underweight mothers are lighter and shorter than infants of women of standard weights. A satisfactory rate gain during pregnancy decreases the likelihood of prematurity but may not increase the size of the baby. Underweight patients tend to add more weight to body tissue mass during pregnancy than patients of standard weights, apparently at the expense of the fetus.

Overweight patients often deliver later than the expected due date. They

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have longer and heavier babies than women of normal weights. The greater birth weight is due to the length of the infant rather than to an increase in mass of soft tissue relative to skeletal size.

The following benefits are evident among obese patients receiving poly-vitamin supplements and a protein concentrate: (1) More women deliver within one week of the expected due

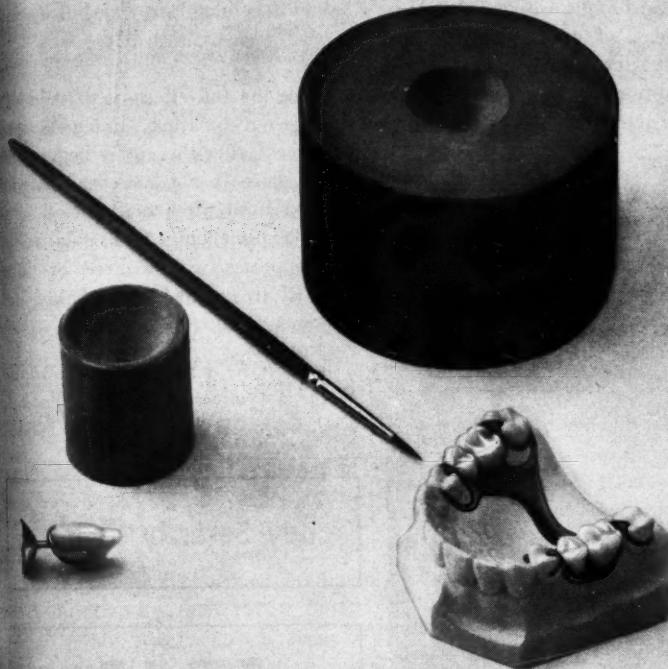
date. (2) The average crown-sole length of the baby is increased. (3) The infants are better developed as shown by relation of birth weight to length and chest circumference.

Tomkins, Winslow T., and Wiehl, Dorothy G.: Nutrition and Nutritional Deficiencies as Related to the Prematurity, Pediat. Clin. North America 687-708, 1954.

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Air Conditioning

Air conditioning is becoming extremely popular in the dental office today. The efficacy of air conditioning depends on (1) control of temperature, (2) relative humidity, (3) air

movement, and (4) radiation or surrounding structures.

A wet-bulb thermometer should be used in the control of indoor temperature. The loss of heat from the human body depends largely on the water content of the surrounding air. Dry-bulb readings may be used to determine contrasting degrees of warmth at different room levels.

The first indicators of unsatisfac-

tory atmospheric conditions are the ears, nose and throat. Poorly controlled temperatures may cause stuffy and congested noses and numb feet in patients with vasomotor disturbances.

The body is well adapted to compensate for wide variations in humidity. A low relative humidity, however, may predispose to respiratory diseases and nervous disorders. Humidity levels between 45 and 50 per cent are considered best.

Patients with vasomotor rhinitis usually prefer a relative humidity of about 55 per cent and a dry-bulb temperature of 70 to 72 degrees Fahrenheit. Persons with frontal sinusitis require a more humid environment during acute attacks and a drier atmosphere during remissions.

Humidity rates of 15 per cent or even less are common in dwellings during midwinter. They cause dryness of the nasal mucosa. Well-regulated air conditioning during this period should lower the incidence of respiratory disease.

Sudden changes experienced in leaving an air-conditioned building and entering a warm atmosphere impose a strain on the heat regulating mechanism of the body. Air conditioning shock can increase the incidence of upper respiratory infection in hay fever patients. Gradual adjustment may be provided by maintaining building hallways and lobbies at intermediate temperatures.

Air motion should be adjusted to prevailing temperature with more movement in the summer to provide the greatest degree of comfort. However, drafts should be avoided by persons subject to ear, nose, and throat conditions.

Air-borne infection is probably an important factor in respiratory disease. Therefore, air conditioning can influence the incidence of upper respiratory infections by either increasing or decreasing the bacterial flora of inspired air. The bacterial count is much higher when the air is recirculated. Employment of an electrostatic precipitator and cellulose filter virtually eliminates dust and air-

CLINICAL AND LABORATORY

SUGGESTIONS

(See pages 78 and 79)

Form to be Used by Contributors
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From: _____

Subject: _____

Explanation of Procedure:

Sketch:

Suggestions submitted cannot be acknowledged or returned.

\$10 will be paid on publication for each suggestion that is used.

borne bacteria and is preferred to ultraviolet radiation.

Contaminated dust and clothing are among the most common sources of pathogenic organisms. Buildings with large window areas allow enough sunlight to keep the bacterial count low. With the present trend in building design toward walls with no windows, the burden of controlling bacterial flora will fall to a greater extent upon air conditioning, increasing the importance of technologic improvements.

Kinkade, Joseph M: Reevaluation of Air-Conditioning from the Point of View of Otorhinolaryngology, Archives Otolaryng. 60:15 (July) 1954.



The Hypometabolic State

Probably the hypometabolic state is more common than is generally realized. The entity is frequently overlooked however. The condition may coexist with other diseases and, if unrecognized and untreated, will prevent a complete recovery of the patient. Such a diagnosis should be considered in chronically ill patients who may be considered hypochondriacs or psychoneurotics. The recognition is particularly important in geriatric patients since the incidence is highest in the fourth and fifth decades.

In the hypometabolic patient the basal metabolic rate is usually in the extreme lower range of normal. This may not be of diagnostic value, however. The most important single symptom is severe morning fatigue with increased alertness in the evening. Associated symptoms include (1) cold intolerance, (2) brittle nails, (3) dry skin, (4) lack of perspiration, and (5) menstrual difficulties.

After arising in the morning, the buccal temperature is lower than normal. The resting pulse is slow. Blood cholesterol levels, body weights, and blood pressures are variable and consequently are of little diagnostic help.

Desiccated thyroid is given in daily doses of 2 to 8 grains daily depending on the apparent thyroid deficiency. The severity of symptoms rather than the basal metabolic rate determines

the amount of thyroid administered. If the symptoms are relatively slight, the initial dose is usually 1 grain; with moderately severe symptoms, 1 grain is given after breakfast and lunch; with severe symptoms, 2 grains are given after breakfast and 1 grain after lunch. When medication is given only after breakfast and lunch, untoward symptoms are less likely to occur.

Since the full effect of thyroid extract is not apparent for ten days to two weeks after therapy is begun, the initial dose is not increased or decreased until after that period. Patients experiencing noticeable relief of symptoms within three or four days of treatment are probably not hypometabolic.

Watson, B. A.: The Hypometabolic State: A Clinical Entity, New York J. Med. 54:2045-2049 (August) 1954.

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Dentistry on the Front Page

What does it do for satisfactory public relations to read on the front page of a metropolitan Sunday newspaper: "Dentist Hits 'Profit Only' Idea at Meet. S. F. Convention Opening told Profession Lacks Idealism. Is Dentistry Really a Profession?" These are among the words the *San Francisco Examiner* used to report a meeting of the American College of Dentists.

It is commendable for any dental group to do a job of self-examination and soul searching. When one examines his conscience it should be done without news releases handed to the press. Reporters should be barred on such intimate occasions.

The public reading this newspaper story must think that dentists are lacking in ideals, that they are more money hungry than other professions, that they are inferior to others.

If you do not believe that these are logical deductions, read how one speaker at this meeting discussed the difference between medical and dental students:

"Young men entering medical school are clearly influenced by the exalted status which has so long been accorded to the medical profession.

Their responses indicate an indifference to the arduous hours, and while statistics show the average medical income to be above that for the dentist, medical students evince less interest in prospects for financial success than do those entering dentistry.

"Dental students, on the other hand, are clearly interested in the prospects of well-defined office hours and of working independently . . .

"Our comparison shows that medical students are the somewhat more idealistic lot. But, because we have a somewhat larger view of dentistry

than merely a field in which one can make a good living without inconvenience, we ought to study ways and means of giving this larger view to the general public and particularly to the age groups from which we draw our dentists of the future."

Perhaps dental students express more interest in financial success than do medical students. If they do the poor souls are in for disappointment in later life, because physicians actually earn on the average, several thousand dollars a year more than do dentists. There is less quackery, less fee

splitting, less ghost surgery in dentistry than in medicine.

Another speaker before this meeting of the American College of Dentists used the old refrain when he said: "It would take perhaps three times the dentists now in active practice to take proper care of the Nation's teeth, yet many members of the profession fail to extend their usefulness by hiring auxiliary personnel."

I have observed that this oft-repeated remark about the alleged shortage of dentists is usually made by a dental educator or somebody in the upper

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financial echelon of dental practice. It is never heard from the dentist in the small town, the one on the street corner in the large city, the average dentist in practice—or from the public who never complain that they cannot receive dental care. The potential demand for dental care is different from the actual demand. There is never enough emphasis given to that difference.

So far as auxiliary personnel are concerned, the fact is that many dentists do not have a sufficiently large practice to afford to hire a hygienist or a laboratory technician. It is not a matter of indifference or lack of professional spirit. It is an affair of economics.

Another speaker before the meeting is reported by the newspaper to have said: "that the record fails to prove that dentistry is 'meeting the preventive requirements which earmark it as a true profession.'" If that is the case, medicine is in a worse situation and fails to make the earmarks of a true profession because the three most devastating diseases—heart, cancer, mental—are not now being conquered by any prevention program formulated by physicians or anybody else. Nor are lawyers altogether successful in prevention. Crimes of violence, sex attacks, bank robberies are still with us. Nor are the clergy notably successful in preventing sin. No one has said that the physician, the lawyer, the clergyman has failed as a true professional man because disease, crime, and sin are still with us.

Another note struck in this symposium of criticism of the dental profession was stated in the newspaper story: "Is dentistry really a profession? Can it make the shift from mechanical care of mouth diseases and tooth filling or replacement to the sort of research and preventive medicine which is the real 'earmark of a profession?'"

No one will deny that research is commendable and of fundamental importance. It will be a happy time when research leads to the day when people have no tooth decay, no pyorrhea, and are free from malocclusions. It will be even happier when the

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Dental scientists at Indiana University began their search for a new fluoride compound when clinical studies revealed that sodium fluoride was ineffective in a toothpaste.¹ Hundreds of potential anti-caries agents were tested. Stannous fluoride was found to be greatly superior to sodium fluoride, and all other agents,^{2, 3} for purposes of a toothpaste.

Conventional toothpaste ingredients inactivate fluoride. But with the aid of Procter & Gamble researchers, the scientists found a way to combine stannous fluoride with a new ingredient that maintains the activity and effectiveness of stannous fluoride in CREST. Result: *Fluoristan*.

BIBLIOGRAPHY

1. Bibby, B. G.: A Test of the Effect of Fluoride-Containing Dentifrices on Dental Caries. *J. Dent. Res.* 24:297-303 (1945).
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death-dealing diseases, crime, and sin are banished from the earth. Until the fruits of research are harvested, there is nothing ignoble about the mechanical care of mouth diseases and the replacement of teeth lost by disease. The skills and handiwork of dentists should be ennobled rather than condemned.

The spirit of self-examination and self-probing is among the most refreshing experiences of civilized man. To look at oneself critically and objectively is one way to develop insight

and self-understanding. No one would ask an enlightened dental group to spend an entire session in self-praise and eulogy. The American College of Dentists should be applauded for carrying on candid discussions on important subjects.

My annoyance and that expressed by dozens of other dentists at San Francisco is based on the management of the meeting of the American College of Dentists where either press releases were prepared or reporters were admitted. Newsmen are

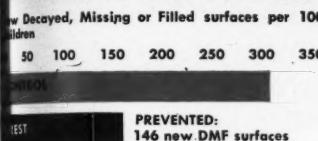
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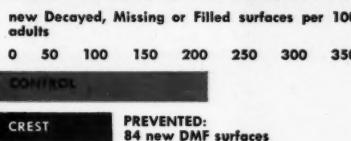
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Summary of results published in the Feb., 1955 issue of THE JOURNAL of the AMERICAN DENTAL ASSOCIATION.



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Clinical study no. 1—423 children, aged 6-16

This study, conducted by the Indiana University School of Dentistry, shows significant caries reduction after one year. Summary of results is at left above.

Clinical study no. 2—750 grade school children

Compares CREST with a sodium fluoride dentifrice plus a control. After one year, results among CREST users confirm Study No. 1.⁵ The sodium fluoride dentifrice was not effective in reducing caries significantly, confirming other independent studies.

Clinical study no. 3—322 adults, aged 18-36

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Six additional independent clinical studies are now in progress among over 4,000 new subjects. Summaries of the results of these studies will be made available to you soon after they are reported.



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looking for a story. Anything that is spectacular, critical, condemnatory is more likely to be blown into a story than is some laudatory undertaking of the dental profession.

The American College of Dentists has been criticized by other dentists who were placed in bad light by the publicity that gave the meeting improper emphasis. The American College will probably say that the meeting was inaccurately reported. That may be. The spirit of the meeting may have been distorted but there would

have been no such unfavorable publicity if somebody had not allowed it that way.

—E. J. R.

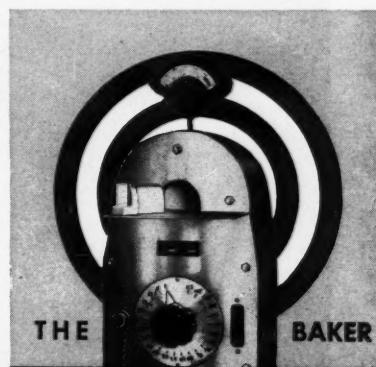
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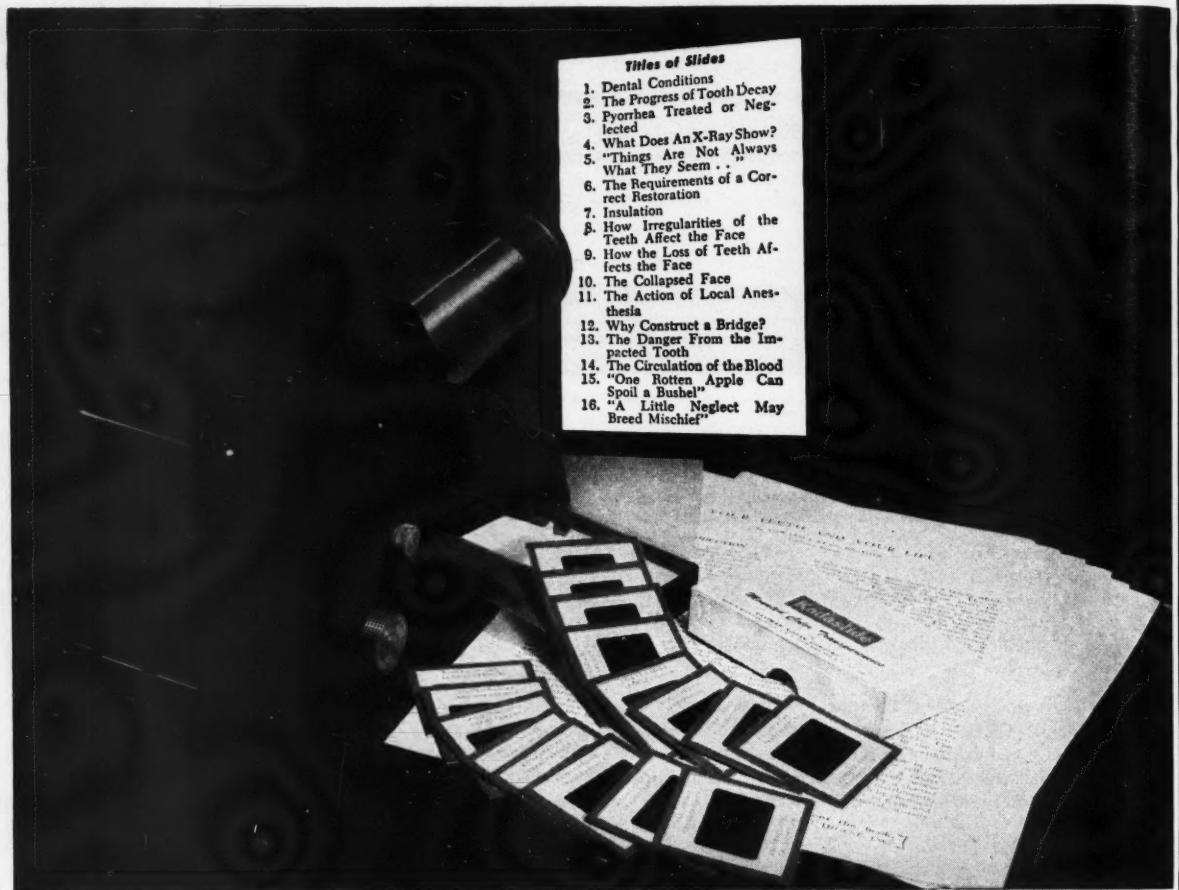


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Plasma Cell of Myeloma of the Mandible

George D. Davis, M.D., and Fred Z. Havens, M.D., Rochester, Minnesota

Report of a Case

A woman 56 years old complained of a painless swelling of the right jaw that had been present for 10 months. In that time it had remained essentially unchanged. A dentist had observed a mandibular lesion in a dental roentgenogram made prior to anticipated extractions of teeth and had suggested further investigation to the patient.

Examination — A firm, discrete mass fixed to the right mandible was disclosed on examination. Roentgenograms demonstrated a large multilocular cyst-like lesion involving and expanding the posterior portion of the body, angle, ramus, and coronoid process of the mandible. The first molar was involved in the process. The lesion as seen in the roentgenogram was thought to be typical of adamantinoma.

Microscopic Study — At operation the gross appearance of the tumor tissue seemed to bear out the roentgenographic conclusions, but microscopic study proved the mass to be a plasma cell myeloma. The lesion was curetted out cleanly and radium therapy was instituted. Further examination of the skeletal system by roentgenograms failed to disclose any other evidence of multiple myelomas, and Bence Jones protein was not found on urinalysis. Protein electrophoresis studies as suggested by Lane¹ were not conducted.

Comment

Cystlike lesions of the mandible occur fairly frequently. Most are well classified, and have fairly characteristic roentgenographic patterns which have been adequately described by numerous authors.

Roentgenographic Appearance not Specific — Isolated plasma cell myeloma of the mandible, however, has been reported only twice previously.^{1,2}

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In the case presented by Lane¹ the lesion also was cystlike and became multilocular. The lesion in the other case was not illustrated, but the roentgenologic appearance was reported as being more suggestive of bone tumor than of osteomyelitis. Others described the usual roentgenographic findings in multiple myelomas of the mandible, but pointed out that this disease may simulate the picture seen in adamantinoma. It must be concluded that the roentgenologic appearance of mandibular plasma cell myeloma is not specific.

Manifestation of Multicentric Origin may be Delayed — The question of whether the lesion in this case is truly an example of a solitary myeloma cannot be answered with certainty at this time, if the diagnostic criteria of several authors who have studied this problem are used. A single survey of the skeletal system is not sufficient to exclude multiple myelomas in cases of this type, for the multicentric origin of multiple myelomas may not manifest itself for several years.

Summary

A case of plasma cell myeloma of the mandible is presented. The man-

dible is a rare location for this disease. The lesion in this case may be solitary, with a favorable prognosis, but only the passage of time can definitely establish such an outcome. The nonspecific roentgenologic appearance of the lesion in this case is described.

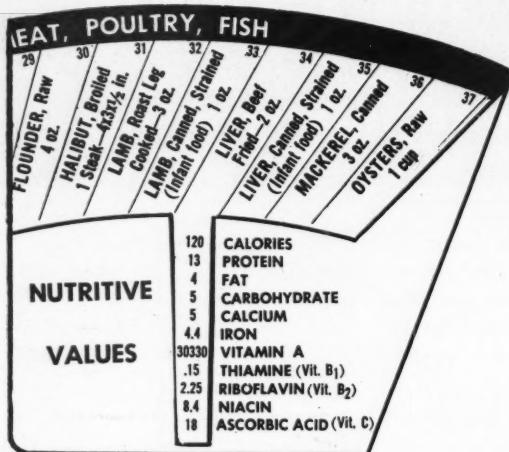
Adapted from Proceedings of the Staff Meetings of the Mayo Clinic 29:569-571 (Oct. 27) 1954.



¹Lane, S. L.: Plasmacytoma of the Mandible, *Oral Surg.* 5:434-442 (Apr.) 1952.

²Christopherson, W. M., and Miller, A. J.: A Re-evaluation of Solitary Plasma-cell Myeloma of Bone, *Cancer* 3:240-252 (Mar.) 1950.

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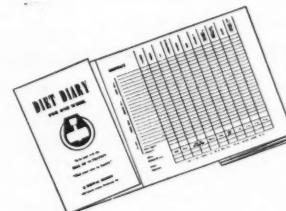
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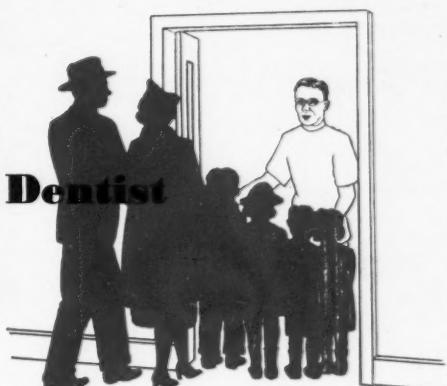
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In your ORAL HYGIENE this month

HOW

the Family Dentist

Is Selected



YOUNG mothers want a *family* dentist—one who will treat every member of the family group (preferably at one long appointment) and who will consider the dental health of the whole family his special responsibility. They will pay for this service not only in money but in loyalty, says Mrs. A. D. Burroughs who recently interviewed a group of sixty young mothers. If you would like to include in your practice the fast-growing young families in your community, be sure to read this article explaining "How the Family Dentist Is Selected."

★ ★ ★

Now that each dentist must decide for himself whether or not he will subscribe to the Old Age and Survivors Insurance plan, it is helpful to have accurate dental-income figures with which to compare your own. A recently retired dentist opens his books for your examination as he sums up the "Financial Rewards of a Lifetime of Dental Practice." Don't miss reading this very interesting article.

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An able dental assistant *can* make as valuable a contribution to the success of a dentist and his practice as the efficient secretary makes to the success of an executive and his business. The fact that relatively few of them reach this level of responsibility and usefulness may, according to M. Travascio, be largely the dentist-employer's own fault. He may not have learned how to work with employees.

He may not know "How to Treat a Dental Assistant."

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Doctor Bernard W. Koppel tells of a dental patient who stopped treatments in order to save money to buy a stove she had seen pictured in a magazine lying in his reception room. Rarely do dentists see such clear-cut examples of a patient's willingness to pay for material objects at the expense of health care. "Why Be Bullied by Patients?" is one dentist's protest against free dental service for any but the truly needy.

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Doctor A. G. Gordon of Philadelphia goes to market two days a week—not to buy fruits and vegetables but to take care of the dental needs of the people who *are* buying and selling. To his second office, in the midst of busy Quakertown Farmers Market, come men, women, and children who would find it difficult to visit a dentist in any other section of the city or on any other day of the week, but who find it easy to drop in to see Doctor Gordon when they come to market. Charles P. Fitz-Patrick writes the story.

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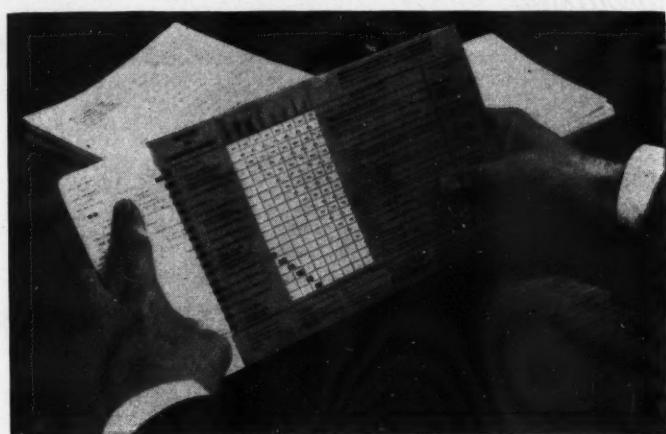
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